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REPORT

ON THE

Health of the County Borough of Bootle
for the year 1912,

BY

W. ALLEN DALEY,

M.D., B.Sc. (LOND.), D.P.H., (CANTAB.), B.A.

Medical Officer of Health,

Medical Superintendent of the Infectious Diseases' Hospital,

School Medical Officer.

BOOTLE :
BOOTLE TIMES, LIMITED, 30, Oriel Road.

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HEALTH COMMITTEE

OF THE

BOOTLE TOWN COUNCIL,

1912-13.

*Mr. ALDERMAN CAIN, J.P., Chairman.

*Mr. ALDERMAN WILD, M.D., J.P., Deputy-Chairman.

*Mr. ALDERMAN CARRUTHERS, J.P.

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Mr. COUNCILLOR TURNER, M.A., M.D.

*Mr. COUNCILLOR WARD.

and

*His WORSHIP THE MAYOR (Mr. Councillor CLEMMEY, J.P.)

**Members of the Hospital Sub-Committee.*

Staff of the Public Health Department.

Medical Officer of Health and
Medical Superintendent of the Linacre Hospital for Infectious Diseases:

W. ALLEN DALEY, M.D., B.S., B.Sc. (Lond.), B.A. (R.U.I.),
D.P.H. (Cantab.)

Assistant Medical Officer of Health and
Resident Medical Officer of the Hospital for Infectious Diseases:

C. W. LAIRD, B.A., M.D., (Dublin), D.P.H.

Assistant Medical Officer of Health and Medical Inspector of Scholars:

(From November 3rd, 1912)

H. J. MILLIGAN, M.B., Ch.B. (Glasgow), D.P.H. (Cantab.)

Inspector of Nuisances, Inspector under the Sale of Food and Drugs Acts,
and the Housing, Town Planning, &c., Act, &c.

†* R. J. McCULLOCH.

Assistant Inspectors of Nuisances:

*H. V. SMITH. H. OWENS. *H. MATTHEWS.

Clerical Staff:

R. MORLEY. Miss B. WILSON. A. MUSKER.

Lady Sanitary Inspector and Inspector under the Midwives Act

*‡Miss ADA STOTT.

Lady Sanitary Inspector:

*Mrs. McKOWEN.

Disinfecting Workmen:

J. LOBB. J. WALL.

* *Certificated Inspector of Nuisances.*

† „ *Inspector of Foods.*

‡ „ *Midwife.*

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HEALTH DEPARTMENT,

TOWN HALL, BOOTLE,

April 7th, 1913

*To the Chairman and Members of the
Health Committee.*

GENTLEMEN,

I have the honour to present to you my Annual Report on the Sanitary Condition of the Borough and the Health of its inhabitants.

The subjects dealt with are those laid down by the Local Government Board in their Memorandum on the Preparation of Annual Reports.

The expanding scope of sanitary administration is causing a rapid increase not only in the amount of work which must be performed by the Health Department but also in the size of the Medical Officer's Annual Report.

The results of the census show that the population in April, 1911, was 69,876; the estimated population in July, 1912, was 71,152.

The birth-rate was 29·9, and except for 1910, when it was 29·1, is the lowest recorded in the Borough.

The death-rate was 16·6, and also is the lowest recorded, with the exception of 1910 when it was only 14·7. The death-rate in 1911 was 18·3. An epidemic of measles occurred during the latter half of 1912, and caused a considerable addition to the death-rate; even when the deaths from this disease are included, the Zymotic death-rate was the lowest ever recorded in Bootle. No cases of Small-pox or Typhus fever were notified during the year; only one death each from Scarlet and Enteric Fever, and eight from Diphtheria, occurred. The rate of infantile mortality reached the low figure of 108 per 1,000 births, and is 10 below the previous lowest which occurred in 1909. The rate in 1911 was 145 per 1,000 births.

Pulmonary Tuberculosis caused 115 deaths; the steps taken to inaugurate a complete Anti-Tuberculosis Scheme are detailed in the Report.

A statement is given of the steps which have been taken for the amelioration of the Housing of the Working Classes.

I must acknowledge my appreciation of the efficient manner in which all the members of the staff have done their duty during the year; special mention must be made of Dr. Laird, Assistant Medical Officer of Health, and of Mr. McCulloch, the Inspector of Nuisances.

I beg to again thank you for the attention and consideration which you have invariably given to my suggestions.

I am, Gentlemen,

Your obedient servant,

W. ALLEN DALEY,

Medical Officer of Health.

STATISTICAL SUMMARY FOR 1912.

Area in Acres (inclusive of Dock Estate)	1,947
Area in Acres (exclusive of Dock Estate)	1,609
Population at Census of 1911... ..	69,876
Estimated Population in July, 1912	71,152
Population per Acre (excluding Dock Estate)	44·2
Number of Houses in the Borough on December 31st, 1912 ...	13,476
Number of Persons in each inhabited house (at Census of 1911) ...	5·6
Number of Births during 1912	2,129
Birth-rate per 1,000 of the Population	29·9
Number of Deaths	1,188
Death-rate per 1,000 of the Population	16·6
Natural Increase of the Population during the year	946
Number of Deaths of Infants (under the age of one year)	232
Infantile Mortality per 1,000 births... ..	108
Number of Uncertified Deaths	41
Death-rate from the seven principal Zymotic Diseases per 1,000 of the population	1·79
Death-rate from Diarrhœa and Enteritis, of children under two, per 1,000 births	15·5
Death-rate from Phthisis per 1,000 of the population	1·61
Death-rate from all forms of Tuberculosis per 1,000 of the population	1·96
The Rateable Value of the Borough was	£468,336
A penny rate on the District Fund produces	£1,407

In 1912 the General District Rate was 2/11 and the total rates 7/8 in the pound (excluding water rate and charges.)

BOROUGH OF BOOTLE.

 ANNUAL REPORT

TO THE

HEALTH COMMITTEE

OF THE

MEDICAL OFFICER OF HEALTH.

Bootle is a County Borough, and has an area of 1,947 acres, excluding the bed of the River Mersey. It is bounded on the south and east by the City of Liverpool, and on the north by the Urban Districts of Waterloo-with-Seaforth and Litherland. The western boundary of the Borough abuts on the mouth of the River Mersey.

PHYSICAL FEATURES OF THE DISTRICT.

The land falls from east to west, i.e.—towards the river. The highest parts are situated in the extreme north-east and south-east boundaries, and reach a height of 125 feet above mean sea level. The lower portions, adjoining the docks, are from 22 to 24 feet above mean sea level.

Geological Formation.—The upper layer consists of drift sand, varying in depth, below which there is, in places, a layer of clay. Underneath this is red sandstone which appears at the surface in certain parts of the town.

POPULATION.

The estimated population at the middle of the year 1912 was 71,152.

At the census in 1881 the population was 27,374; in 1891, 49,217; in 1901, 58,556, and in 1911, 69,876.

These enumerations were taken in April. In 1906 the district of Orrell was added to the Borough. Taking into account the population of Orrell in 1901, viz.:—1,679, the rate of increase of population of the whole Borough during the last decade was 16%. (from 60,235 to 69,876), compared with 20·7% in the preceding intercensal period. The following table gives the

populations in the various wards at the censuses of 1901 and 1911, and the relative increase or decrease of the population during that time :—

Wards.	Population in 1901.		Population in 1911.		For every 100 persons in the Ward in 1901, there were in 1911.	
Derby	10,038	...	14,473	...	144
Stanley	11,137	...	11,364	...	102
Mersey	13,259	...	12,053	...	90
Knowsley	...	12,371	...	12,309	...	99
Linacre	11,751	...	15,770	...	134
Orrell	(1,679)	...	3,907	...	232
Whole Borough	58,556	...	69,876	...	116	

The number of families or separate occupiers at the census of 1911, was 13,873. The ward distribution of these families was :—Derby, 2,956 ; Stanley, 2,282 ; Mersey, 2,359 ; Knowsley, 2,295 ; Linacre, 3,164 ; Orrell, 1,817.

The following table gives the age and sex-distribution of the population at the last census.

				Males.	Females.					Males.	Females.
All Ages				34,408	35,468	All Ages				34,408	35,468
Under 1 year ... ..	...	...	...	897	848	Under 5 years ... ..	...	...	...	4,305	4,212
1 ... ..	...	...	...	840	838	5 and under 10 ... ..	...	...	...	4,145	4,030
2 ... ..	...	...	...	859	876	10 „ 15 ... ..	...	...	...	3,573	3,622
3 ... ..	...	...	...	854	838	15 „ 20 ... ..	...	...	...	3,242	3,405
4 ... ..	...	...	...	855	812	20 „ 25 ... ..	...	...	...	2,963	3,163
5 ... ..	...	...	...	893	822	25 „ 30 ... ..	...	...	...	2,801	3,117
6 ... ..	...	...	...	804	840	30 „ 35 ... ..	...	...	...	2,707	2,878
7 ... ..	...	...	...	824	828	35 „ 40 ... ..	...	...	...	2,425	2,523
8 ... ..	...	...	...	810	783	40 „ 45 ... ..	...	...	...	2,029	2,122
9 ... ..	...	...	...	814	757	45 „ 50 ... ..	...	...	...	1,705	1,707
10 ... ..	...	...	...	775	739	50 „ 55 ... ..	...	...	...	1,505	1,439
11 ... ..	...	...	...	731	718	55 „ 60 ... ..	...	...	...	1,108	1,083
12 ... ..	...	...	...	711	742	60 „ 65 ... ..	...	...	...	819	844
13 ... ..	...	...	...	664	710	65 „ 70 ... ..	...	...	...	548	584
14 ... ..	...	...	...	692	713	70 „ 75 ... ..	...	...	...	332	446
15 ... ..	...	...	...	686	690	75 „ 80 ... ..	...	...	...	134	191
16 ... ..	...	...	...	696	666	80 „ 85 ... ..	...	...	...	53	75
17 ... ..	...	...	...	606	648	85 „ 90 ... ..	...	...	...	11	23
18 ... ..	...	...	...	621	733	90 „ 95 ... ..	...	...	...	3	3
19 ... ..	...	...	...	633	668	95 „ 100 ... ..	...	...	...	—	1
20 ... ..	...	...	...	606	593	100 years and upwards ...	...	...	...	—	—

Assuming that the age distribution in July 1912 was similar to that in April, 1911, the figures showing the population at each age group in the middle of 1912 are as follow :—

Under 1 year	...	...	...	...	1,776
1 year and under 2	...	...	...	...	1,709
2 years and under 5...	...	...	...	...	5,189
Total under 5	...	...	...	—	8,674
5 years and under 15	...	...	...	...	15,653
15 „ „ „ 25	...	...	...	...	13,008
25 „ „ „ 45	...	...	...	...	20,980
45 „ „ „ 65	...	...	...	...	10,395
65 „ „ „ older	...	...	...	...	2,442
					<hr/> 71,152 <hr/>

SOCIAL CONDITIONS AND CHIEF OCCUPATIONS OF THE INHABITANTS.

The census returns of 1911 on this subject are not yet available. There is no reason to think that there has been any marked change in the occupations of the inhabitants since 1901. Of 19,468 wage-earning males enumerated at that census, 3,773 were grouped under the heading “dock labourers, wharf labourers,” and 872 as “general labourers.”

It is hoped that the Clearing House System which has lately been inaugurated will, by decasualising labour at the docks, materially increase the prosperity of the numerous inhabitants of the Borough who are there employed.

POOR LAW AND HOSPITAL RELIEF.

The Clerk of the West Derby Board of Guardians has kindly supplied the following information relating to Poor Relief given in the Bootle District.

“(a) Year ended 30th September, 1912.

Outdoor Medical Relief only.

Individual Orders on Medical Officers :—

	To March 31st.	To Sept. 30th.	Total.
District No. 1. ...	900	636	1,536
District No. 2. ...	730	481	1,211
Total number of Individual Orders	<hr/> 1,630	<hr/> 1,117	<hr/> 2,747 <hr/>

About 20% of the patients were admitted to the Union Hospitals.

(b) Half-year ended 30th September, 1912.

Out-door Relief (excluding Medical.)

Men.		Women.		Children.	
59	...	273	...	478	—Total, 810."

During 1912, 1,029 In-Patients and 13,386 Out-Patients were treated at the Bootle Borough Hospital. Many Bootle people also attend the Liverpool Hospitals.

VITAL STATISTICS.

In accordance with the system inaugurated in 1911, there is now a transference of births and deaths to the districts to which these should properly be assigned, when they occur in places other than the usual residences of the persons concerned.

It is very instructive to compare our own vital statistics with those of neighbouring towns and of other seaports, and the following table has been prepared with the assistance of the Medical Officers of Health of the towns mentioned, who have been good enough to supply the statistics for their districts. The rates for England and Wales and for the 95 great towns, of which Bootle is one, have been obtained from the Quarterly Summary, issued by the Registrar-General.

	Estimated Population.	Birth-rate.	Death-rate.	Death-rate corrected for age and sex distribution.	Rate of Infantile Mortality.	Scarlet Fever.	Diphtheria.	Measles.	Whooping Cough.	Enteric Fever.	Pulmonary Tuberculosis.	NonPulmonary Tuberculosis.	Diarrhea and Enteritis, (under 2) per 1000 births.
England & Wales	36,539,636	23·8	13·3	13·3	95	0·05	0·11	0·35	0·23	0·04	—	—	8·53
95 Great Towns...	17,639,881	24·9	13·8	14·6	101	0·06	0·13	0·47	0·26	0·04	—	—	10·88
Birkenhead ...	133,521	28·2	14·7	—	98	0·07	0·12	0·38	0·36	0·03	1·1	0·4	14·0
Blackburn ...	133,539	20·4	14·4	—	119	0·02	0·07	0·40	0·19	0·04	0·81	0·24	12·7
Blackpool ...	62,125	15·5	12·1	12·1	88	0·01	0·08	0·06	0·05	0·06	0·79	0·29	7·2
Bolton... ..	182,534	22·6	13·7	15·4	96	0·06	0·11	0·19	0·21	0·06	0·99	0·29	*0·21
Bootle	71,152	29·9	16·6	17·4	108	0·01	0·11	0·87	0·22	0·01	1·61	0·35	15·5
Burnley	108,012	23·0	15·0	—	145	0·02	0·05	0·21	0·33	0·07	0·85	0·43	*0·48
Bury	59,106	20·8	14·1	—	112	0·07	0·02	0·13	0·37	0·03	1·30	0·44	*0·18
Liverpool	752,021	29·5	17·7	18·9	125	0·11	0·13	1·15	0·38	0·02	1·4	0·4	20·5
Oldham	148,840	22·9	16·3	—	117	0·04	0·08	0·4	0·4	—	1·3	—	—
Preston	117,630	23·1	16·7	—	122	0·31	0·34	0·78	0·38	0·07	0·81	—	—
Rochdale	92,530	20·3	15·0	15·9	111	0·10	0·11	0·31	0·28	0·04	1·10	0·42	10·6
St. Helens	98,159	31·9	15·5	16·8	124	0·19	0·19	0·62	0·46	0·08	0·92	0·66	5·73
Salford	232,726	26·8	17·2	19·0	130	0·05	0·13	1·06	0·55	0·1	1·5	0·6	11·0
Southport	70,640	14·7	12·4	—	76	—	0·16	0·08	0·04	0·03	0·81	0·31	4·71
Stockport	110,781	22·7	15·1	16·3	109	0·04	0·16	0·5	0·36	0·04	1·31	0·48	10·71
Wallasey	81,000	22·1	11·6	—	76	0·07	0·09	0·23	0·18	0·03	0·8	0·3	1·66
Warrington	73,158	28·3	14·5	15·7	92	0·13	0·15	1·14	0·1	0·12	1·12	0·39	11·1
Wigan... ..	90,504	28·5	15·9	15·9	125	0·01	0·11	0·33	0·31	0·13	1·07	0·66	*0·42
Bristol... ..	359,400	21·4	13·4	13·3	102	0·03	0·13	0·42	0·19	0·01	1·09	0·28	*0·18
Grimsby	76,180	27·2	12·5	—	104	0·06	0·17	0·47	0·45	0·05	0·72	0·32	—
Ipswich	74,899	23·1	15·2	14·8	113	0·01	0·20	0·66	0·45	—	1·21	0·44	—
Middlesbrough ..	106,554	31·8	17·8	—	126	0·19	0·08	0·69	0·06	0·06	1·1	0·60	9·7
Newcastle-upon- Tyne	269,193	26·8	14·3	—	101	0·13	0·12	0·61	0·14	0·06	1·3	0·5	11·9
Southampton ...	120,891	23·3	13·2	13·1	84	0·01	0·15	0·14	0·29	0·06	1·33	0·35	11·0
South Shields ...	109,678	30·6	16·0	—	106	0·05	0·05	0·58	0·46	0·05	1·53	0·39	6·0
Sunderland... ..	151,835	31·3	15·9	—	115	0·01	0·13	0·44	0·27	0·02	1·21	0·62	—
Tynemouth... ..	59,809	28·9	16·0	16·3	102	0·03	0·06	0·53	0·18	0·06	1·67	0·46	14·4
West Hartlepool	64,095	28·2	14·8	—	103	0·33	0·01	0·96	0·20	0·03	1·06	0·64	6·0

* These Rates are per 1,000 of the population ; the corresponding rate in Bootle is 0·46.

The death-rates in Bootle from Scarlet Fever and Enteric Fever are satisfactory, those from Diphtheria, Whooping Cough, Non-pulmonary Tuberculosis, Diarrhoea and Enteritis, and also the Rate of Infantile Mortality are fairly satisfactory. The total death-rate, and that from Measles and from Pulmonary Tuberculosis are all unsatisfactory. In connection with these statistics I would point out that a death-rate in Bootle of 1 per 1,000 means 71 deaths per annum. It may be remembered when studying these statistics, as was stated some years ago by Sir John Simon, that "Sanitary Authorities are the appointed guardians of masses of human beings, whose lives are at stake in the business."

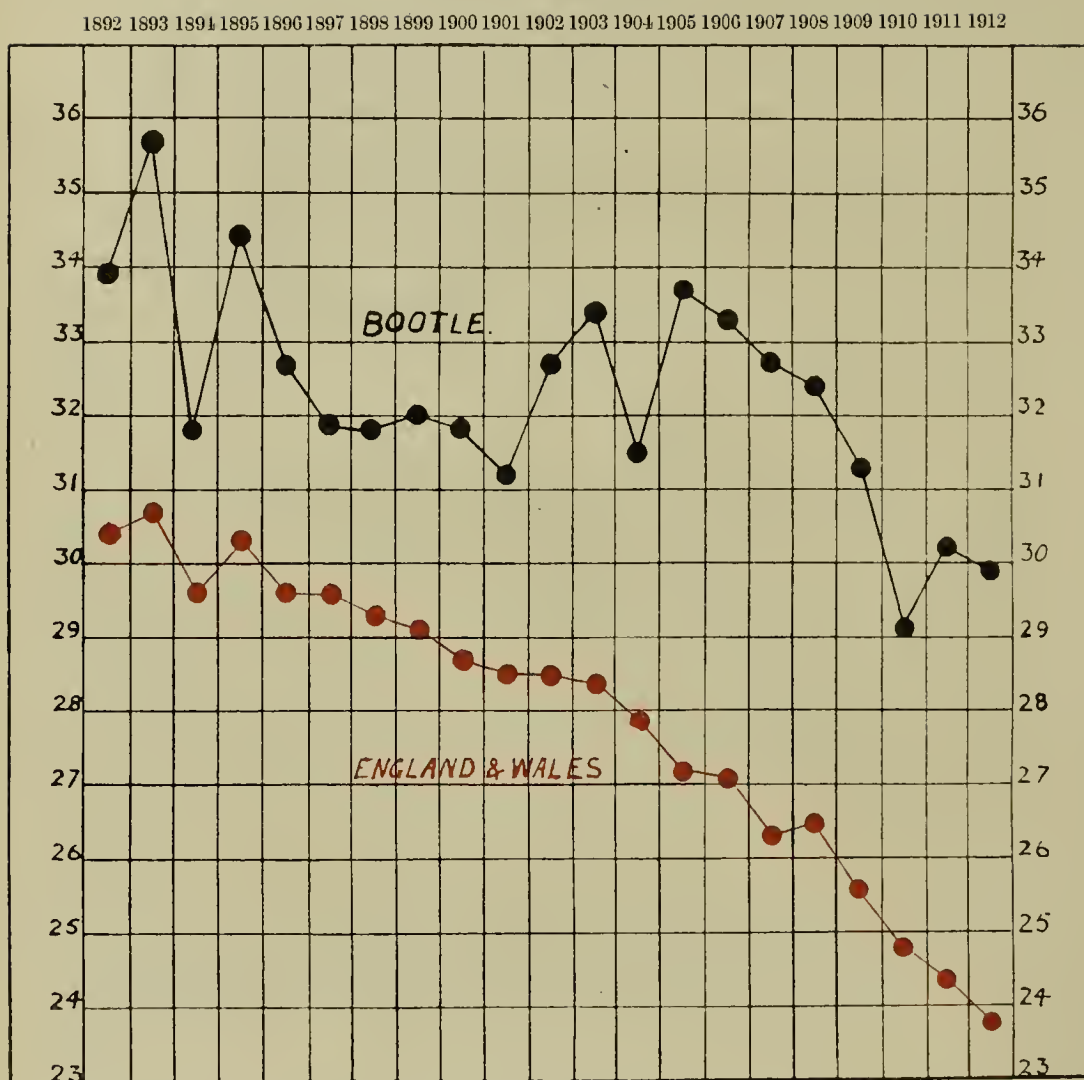
BIRTHS.

During the year 2,098 births, exactly the same number as in 1911, were registered in the district. The Registrar-General informed the Medical Officer of Health of 36 births, which occurred in other districts: these births are of children whose mothers have their usual residence in this Borough, and who were temporarily elsewhere when the births took place. No births registered in Bootle were transferred to other districts. This is the second year in which births occurring under these circumstances, have been transferred to Bootle, hence the birth-rate is not strictly comparable with that of any year except 1911.

Of the 2,129 births accredited to Bootle, 1,070 were of males, and 1,059 of females. The birth-rate per 1,000 of the population was 29·9. The rate for the decennium 1902-11 is recorded as 31·9, but had all the births properly belonging to Bootle been counted, it would be slightly higher.

The birth-rate for England and Wales during 1912 was 23·8. For the 95 large towns, including London, it was 24·9. The following chart shows the variations in the birth-rate per 1,000 of the population of Bootle and of England and Wales during the past 21 years.

BIRTH RATES.



Year.	Number of Births.
1892	1,710
1893	1,823
1894	1,660
1895	1,823
1896	1,759
1897	1,748
1898	1,772
1899	1,809
1900	1,827
1901	1,837
1902	1,949
1903	2,010
1904	1,918
1905	2,079
1906	2,171
1907	2,168
1908	2,182
1909	2,138
1910	2,016
1911	2,120
1912	2,129

The natural increase of the population, that is, the excess of births over deaths, during each year from 1892 to 1911, is given in the following table:—

1892	...	723	1902	...	788
1893	...	659	1903	...	871
1894	...	709	1904	...	739
1895	...	713	1905	...	941
1896	...	712	1906	...	962
1897	...	691	1907	...	1040
1898	..	717	1908	...	957
1899	...	597	1909	...	990
1900	...	586	1910	...	997
1901	...	783	1911	...	837

Annual average ... 689

Annual average ... 912

During 1912 the natural increase of the population was 946.

In the following table the numbers of births registered in the Borough in each quarter of the year are shown, together with the wards in which they occurred :—

Ward.	1st quarter.	2nd quarter.	3rd quarter.	4th quarter.	Total.	Birth rate per 1000 of the estimated Population.
Orrell ...	46	30	46	30	152	36·1
Mersey ...	107	79	101	99	386	32·4
Knowsley	94	97	102	104	397	32·2
Linacre ...	124	130	112	138	504	30·9
Derby ...	103	106	123	98	430	28·5
Stanley ...	55	59	62	48	224	19·6
Whole Borough	529	501	546	517	2,093	29·4

To these must be added the 36 births which occurred in other districts ; the wards in which the mothers of these children resided are not known.

Illegitimate births numbered 50 and where 2·3% of the total: 22 of these took place outside the Borough.

The notification of Births Act, 1907, came into operation in Bootle on the 7th January, 1908. By the provisions of this Act, the Medical Officer of Health should be informed of each birth within thirty-six hours of its occurrence. Visits are paid by the Lady Inspectors to the mothers of the newly-born children, and advice is given concerning infant care and management.

In some cases notification is not made in accordance with the provisions of the Act, and the birth is not heard of until it is recorded in the returns of the Registrar, some six weeks after the birth of the child. These children are, as a rule, those of better class parents who are attended by private practitioners. Arrangements have now been made with the Registrar of the district in which Walton Workhouse is situated, by which he informs the Health Department of the names of those children born in the Workhouse, whose mothers usually reside in Bootle. Visits are paid by the Lady Inspectors to these addresses. It would be an advantage if definite information of the date of discharge of these infants could be obtained, as they, especially, ought to have the services of the Lady Inspectors.

NOTIFICATION OF BIRTHS ACT, 1907.

	1908.	1909.	1910.	1911.	1912.
Births notified by Medical Practitioners	251...	158 .	131...	101 ..	93
„ „ „ Midwives	1,476...	1,553...	1,522...	1,560...	1,593
„ „ „ Others ... ' ...	155 ..	58...	37...	66...	52
	—	—	—	—	—
Totals ...	1,882	1,769	1,690	1,727	1,738

The number of births registered in the Borough in each of these years has been 2,182, 2,138, 2,016, 2,093 and 2,093, showing that in 1908 some 300 births were not notified in accordance with the provisions of the Act ; in 1909, 369 ; in 1910, 326 ; in 1911, 366 ; and in 1912, 355.

DEATHS.

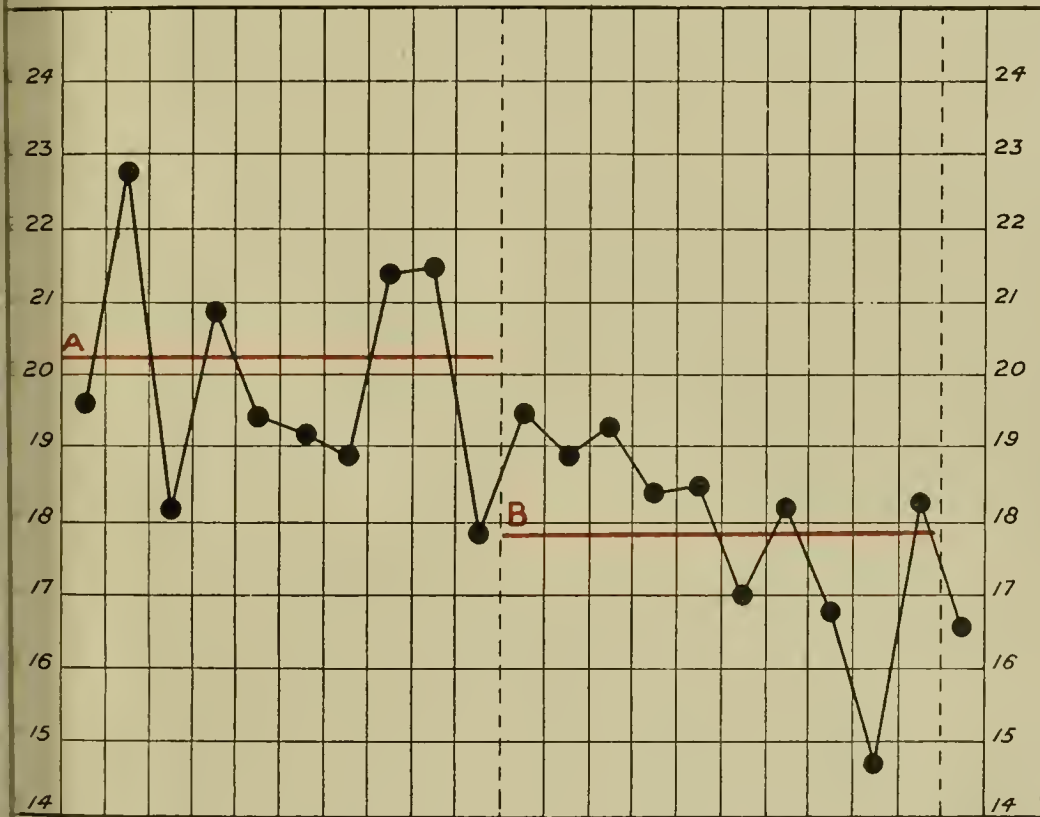
The number of deaths registered in Bootle during the 52 weeks ended December 28th, 1912, was 947. This number includes the deaths of 46 non-residents which occurred in the Borough ; 32 of these died in the Bootle Borough Hospital. It is now possible to accurately ascertain how many Bootle persons died in other parts of England and Wales : during the year the Registrar-General provided the Medical Officer of Health with particulars relating to 282 persons who had died in other parts of the country and were stated to have been inhabitants of the Borough. When these adjustments have been made, the total number of deaths assigned to Bootle is 1,183, equal to a death-rate of 16·6 per 1,000 of the population. It is thus seen that during 1912 the excess of deaths “ transferred in ” over deaths “ transferred out ” is 236. The corresponding figure for last year, the first in which there was a complete transference of deaths, was 233. In the preceding five years, the corresponding figures were 170, 136, 147, 159, and 147. Hence it is that the death-rate for this year cannot be accurately compared with the rate of any year except that of 1911, as in former years many deaths of residents occurring in other parts of England and Wales were not included in our statistics. “ Transferable Deaths ” are defined as “ deaths of persons who, having a fixed or usual residence in England and Wales, die in a district other than that in which they usually resided.”

The death-rate of England and Wales during 1912 was 13·3. That for Bootle was 16·6. The rates in neighbouring towns and other seaports are given on page 12. The crude death-rate of the 95 great towns, including

London, was 13·8. The correction factor for age and sex distribution in Bootle, based on the last census is 1·0528. Hence the death-rate of Bootle when corrected for age and sex distribution is 17·4 : in the 95 great towns, it is 14·6.

CHART SHEWING DEATH-RATE OF THE BOROUGH SINCE 1892.

1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912



A.—Death-rate for the
decennium 1892-1901
was 20·3.

B.—Death-rate for the
decennium 1902-1911
was 17·9.

The rates from 1892-1910 are partially, and those for 1911 and 1912 fully, corrected for "transferable" deaths ; they are all uncorrected for age and sex distribution.

The following diagram shows the relative importance of the various diseases, or groups of diseases, which materially contributed to the 1,183 deaths which occurred in 1912. Those diseases which are ordinarily regarded as infectious and preventable are contained within red lines.

DIAGRAM SHOWING THE PRINCIPAL CAUSES OF DEATH
DURING THE YEAR 1912.



Table III., on page 94, shows the number, and the age distribution, of the deaths from the principal diseases.

MORTALITY IN RELATION TO SEASON.

Ward	Number of Deaths in each Quarter.						Total.	Death-rate per 1,000 of the estimated population
	1st.	2nd.	3rd.	4th.				
Mersey	80	73	63	85	...	301	...	25·3
Knowsley	58	63	58	72	...	251	...	20·4
Derby	60	43	55	56	...	214	...	14·2
Linacre	50	51	50	77	...	228	...	13·9
Stanley	35	38	35	45	...	153	...	13·4
Orrell... ..	16	6	7	7	...	36	...	8·5
	299	274	268	342		1,183		16·6

The very heavy mortality which was experienced in the third quarter of 1911, contrasts with the relatively small mortality in the corresponding quarter of 1912. This is due to the fact that owing to the inclement weather of the third quarter of the latter year, there were only 18 deaths from diarrhœa and enteritis compared with 117 during the same quarter of 1911, when the weather was almost tropical. The high mortality of the fourth quarter is due to the epidemic of measles which then prevailed.

Mersey Ward, as usual, has the highest death-rate, viz. : 25·3 ; Knowsley being second with 20·4.

The death-rates per 1,000 of the population from those causes which show the most striking differences between Mersey and Knowsley Wards, and the other wards of the town, are given in the following table :—

Estimated Population.	Total Death-rate	Measles.	Phthisis.	Pneumonia	Violence.	Diarrhœa and Enteritis (all ages)	Con- genital Debility
Mersey .....11,893	25·3	1·76	2·4	3·1	1·26	1·0	2·6
Knowsley .....12,301	20·4	1·46	2·2	2·3	0·81	0·81	0·97
Other Wards ...46,958	13·4	0·48	1·2	1·4	0·40	0·38	1·04
Whole Borough 71,152	16·6	0·87	1·6	1·8	0·61	0·56	1·29

The Infantile Mortality rates in these districts are :—Mersey, 176 per 1,000 births ; Knowsley 125 ; other wards 84 ; whole Borough, 108. Mersey Ward, which is adjacent to the docks, is inhabited by the poorest people in the Borough, their occupations being chiefly those of dock labourers and marine firemen. Lately, there has been some migration of these classes to Knowsley Ward, which adjoins it. The heavy death-rate from Phthisis in these wards illustrates the close association between poverty and this disease, but it must also be remembered that better-class people, when impoverished, because the wage-earner has developed Phthisis, may, by force of circumstances have to remove to the small houses in these wards.

There is a considerable amount of sub-letting in Mersey Ward, and in certain streets in Knowsley Ward. The notoriously intemperate habits of the dock-labouring class, are, no doubt, to a considerable extent, responsible not only for the poverty but also for the high death-rates in the wards where they and their families constitute a majority of the population.

INFANTILE MORTALITY.

There were 232 deaths of infants; this is an infantile mortality rate of 108 per 1,000 births. In this section of the report an "infant" means a child under the age of one year.

The average annual rate for the previous ten years was 144 per 1,000 births.

The rates in the different wards for 1912 and the previous ten years are :—

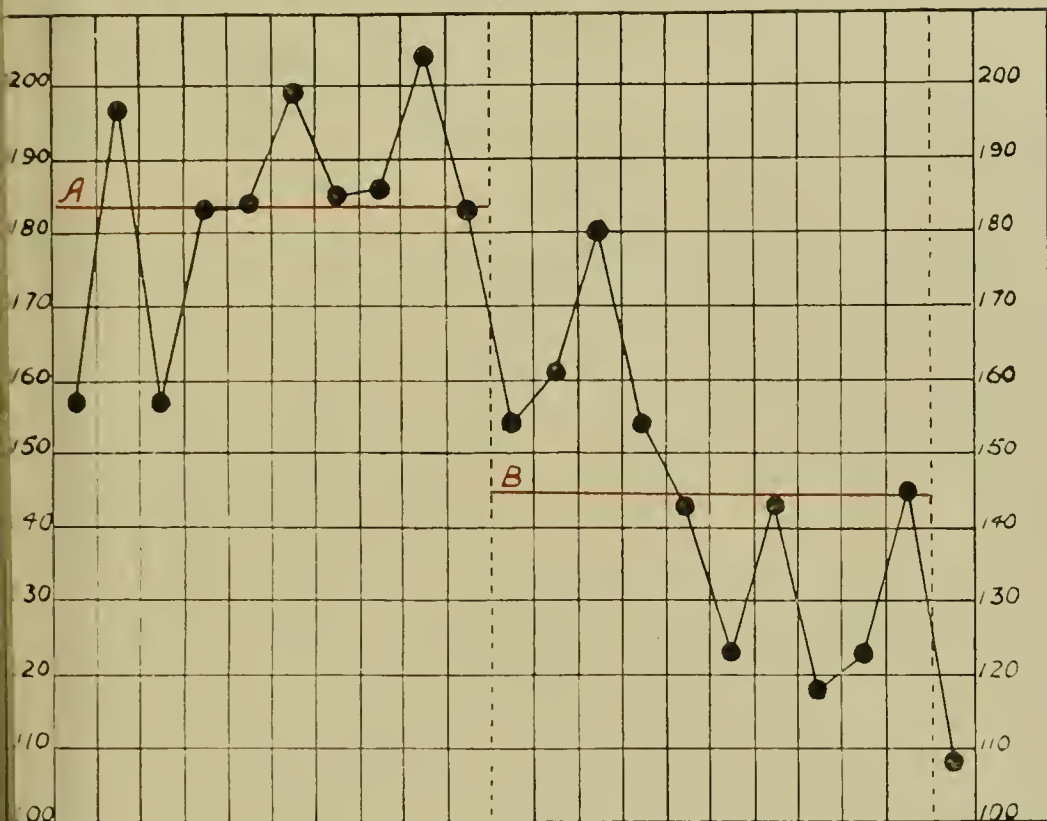
Ward.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	Rate for the de- cennium 1912. 1902-11.	
Mersey ...	212	164	222	174	177	164	200	185	185	156	176	184
Knowsley...	139	162	186	130	156	132	160	129	106	213	125	151
Stanley ...	136	212	174	161	119	92	111	108	80	157	107	136
Linacre ...	156	143	158	156	152	115	132	85	106	129	65	132
Derby	113	143	154	150	121	100	109	122	129	112	109	125
Orrell	—	—	—	—	100	144	154	44	123	108	65	*111
Whole Borough }	154	161	180	154	143	123	143	118	123	145	108	144

*This figure is for the six years 1906—1911.

During 1912 the rate of infantile mortality for England and Wales was 95 per 1,000 births. In the 95 great towns it was 101. The rates in certain other towns are shown on page 12. The rates of infantile mortality for the whole Borough during the past 21 years are shown on the chart.

RATES OF INFANTILE MORTALITY.

1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912



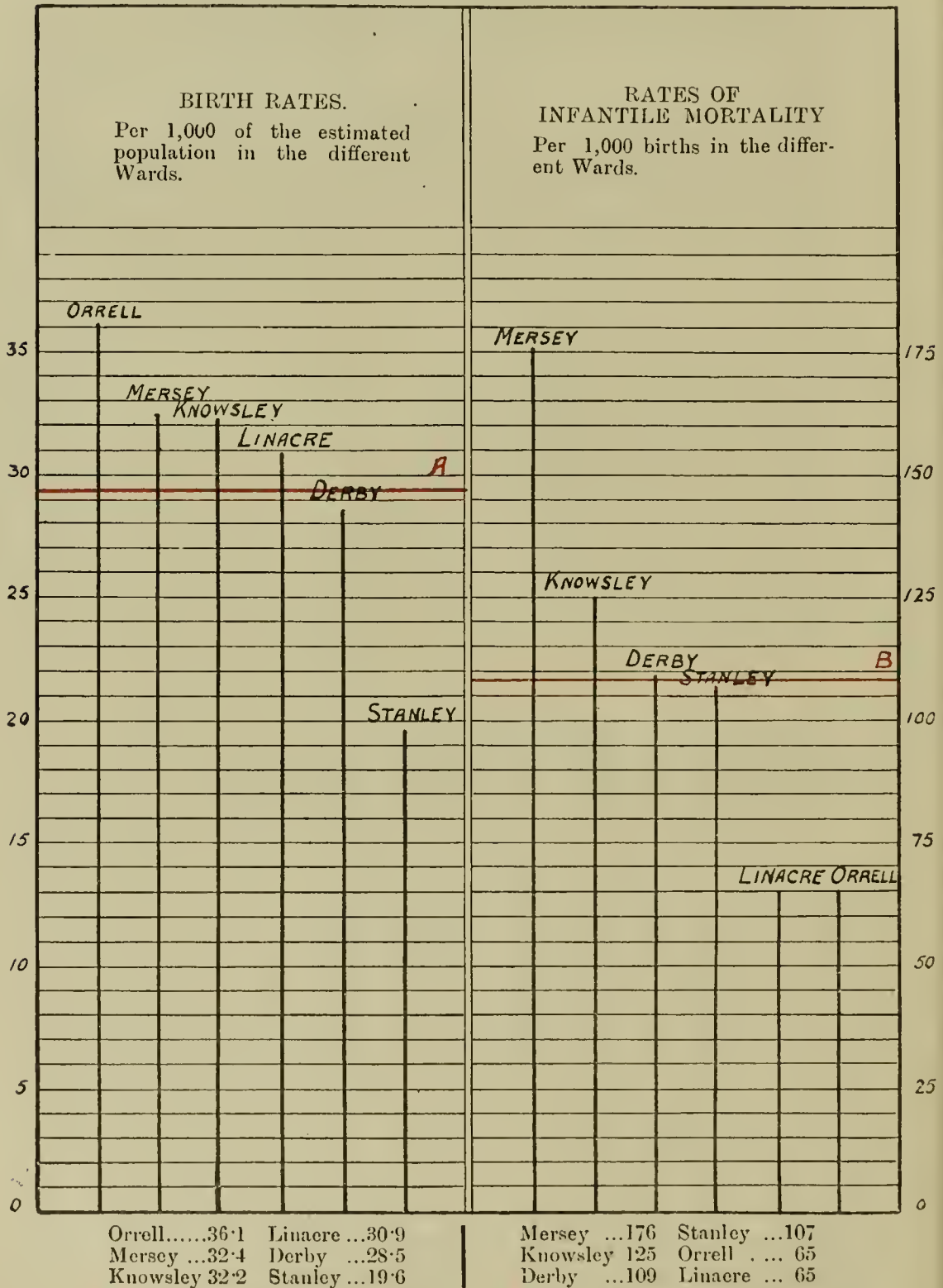
Year.	In- fantile Deaths.
1892	269
1893	351
1894	262
1895	335
1896	324
1897	349
1898	329
1899	337
1900	373
1901	337
1902	302
1903	325
1904	346
1905	321
1906	312
1907	268
1908	314
1909	253
1910	249
1911	308
1912	232

A.—Rate of infantile mortality during the decennium, 1892-1901 was 183 per 1,000 births.

B.—Rate of infantile mortality during the decennium 1902-1911 was 144 per 1,000 births.

It is very gratifying to note the marvellous reduction in the rate of infantile mortality which has occurred in recent years. Had the rate during the decennium 1892-1901 prevailed during 1912, 389 infants would have lost their lives, which, when compared with the actual number 232, shows a saving of 157 lives. If we take for purposes of comparison a year of exceptional infantile mortality, 1900, when the rate was 204 per 1,000 births, the deaths of infants would have numbered 434, and the saving would have been 202 lives. It cannot be claimed that all this saving is due to the work of the Sanitary Authority, but a certain proportion is undoubtedly due to the efforts which are now being made by them to preserve infant life. It must, however, be remembered in this connection that the wet summer, with the consequent small number of deaths from diarrhoea, was an important factor in producing the satisfactory rate now under consideration.

The following diagram shows in a graphic form the rates for 1912, and also the birth-rates in the various wards :—



The causes of infantile mortality and the ages at death are set out in detail in Table iv. at the end of this report. A summary of the principal causes of the differences between the rates for Mersey, Knowsley and the other wards is given in the following table :—

RATES PER 1,000 BIRTHS.

Wards.	No. of Births.	Rate of Infantile Mortality.	Measles.	Whooping Cough.	Convulsions.	Bronchitis & Pneumonia.	Diarrhoea & Enteritis.	Prematurity.	Marasmus, Congenital Debility, Malformations	Other Causes.
Mersey...	386	176	7·7	10·3	15·5	36·2	12·9	38·8	36·2	18·1
Knowsley	397	125	2·5	5·0	10·0	42·8	22·6	17·6	17·6	7·5
Other Wards	*1,346	84	2·9	1·4	8·1	13·3	8·1	23·0	11·8	15·6
Whole Borough	2,129	108	3·7	3·7	9·8	23·0	11·7	24·8	17·3	14·5

*These include 36 births registered outside the Borough.

It will be seen that the infantile mortality in Mersey Ward is greater than that in the "Other Wards" in each of the diseases or groups of diseases mentioned above. The main cause of the excess in that Ward is infantile wasting (Marasmus) and Congenital Debility: Bronchitis and Pneumonia also contribute largely to the excess: Measles, Whooping Cough, Convulsions, Diarrhoea and Prematurity are lesser factors. The excess in Knowsley Ward is almost entirely due to Bronchitis and Pneumonia and to Diarrhoea and Enteritis; lesser causes are Marasmus and Congenital Debility, Whooping Cough and Convulsions.

Throughout the Borough the rate of infantile mortality amongst legitimate children was 106, and amongst illegitimate 220 per 1,000 births. 51 or 22% of the deaths of children under one year occurred before the end of the first week: 37% occurred before the end of the first month, and 57% before the end of the third month; 17% of the deaths were of infants between the ages of 3 and 6 months, and 26% between 6 and 12 months. 90 or 38% of the 232 deaths were in the groups Prematurity and Congenital Debility: 67% of all the deaths under 1 month were due to these causes and

55% of those under 3 months. No less than 30 children prematurely born died before the end of the first week of their lives. It is evident that there will not be any considerable reduction in the present rate of infantile mortality, unless there is a substantial diminution in the number of deaths from this cause, the prevention of which is a peculiarly difficult task. Enquiries are made into all these cases and it is most unusual to find any definite cause. Until the various causes of prematurity are better known, I fear that little can be done to prevent its occurrence. The group Atrophy, Debility, and Marasmus is a more hopeful field of preventive medicine and much is already being done by Lady Visitors to educate mothers on the subject of infant care and feeding. There is not a "School for Mothers" nor an "Infant Consultation" in the town. The provision of a weighing machine for babies in the Lady Inspectors' room would be of great service, and mothers with weakly infants would be encouraged to bring them regularly to have them weighed and to receive appropriate advice as to the necessity or otherwise of altering the mode of feeding.

In 1912 Diarrhœa and Enteritis caused 25 or 10% of the deaths, compared with 93 or 30% in 1911. This subject is fully dealt with later.

There were 21 deaths from infectious diseases, viz. :—8 from measles, 8 from whooping cough, and 5 from syphilis. It is possible that the last figure does not give the full measure of the infantile deaths due to this disease, which as stated by Dr. Newsholme, must still be regarded as a cosmopolitan canker.

There are two Lady Inspectors who regularly visit all infants in the poorer neighbourhoods. The first visit is paid as soon as the notification of the birth is received; thus, as a rule the babies are seen when they are 3 or 4 days old. A visit at this early date is particularly valuable in cases of premature and delicate children. Routine visits are paid to all infants about 4 times each year: special cases are visited very frequently. In 1912, 86 % of the infants whose births were notified, either to the Medical Officer of Health or to the Registrar of Births, were visited. The remaining 14% occurred in families where advice on infant care and feeding would probably be obtained from other sources. The work of the Lady Inspectors is materially assisted by that of the ladies of the Bootle Health Society, towards the

funds of which the Health Committee make a contribution. During 1912, 243 cases were referred to the Society. Milk and bread were supplied to necessitous mothers for 2 or 3 weeks after the birth of their children, and in special cases until the children reached the age of 12 months: Occasionally milk has been given to expectant mothers. Mothers and children were provided, when necessary, with suitable clothing; in certain cases the services of a midwife were provided. It is probable that under the operations of the National Insurance Act, the maternity benefit grant of 30/- will be available for many of the class previously helped by the Society, but it is certain that there will be some mothers not entitled for various reasons to the benefit, and it is very desirable that the Society should continue to exist for the purpose of assisting these cases.

ZYMOTIC DISEASES.

Table showing number of deaths from the principal zymotic diseases for 1912 and the preceding ten years.

	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Average of 10 years 1902-11.
Smallpox	4	6	—	—	—	—	—	—	—	1	—	1·1
Scarlet Fever	14	25	13	32	14	7	17	16	6	5	1	14·9
Diphtheria	8	9	19	18	11	14	14	10	6	11	8	12·0
Measles	46	2	48	9	44	16	34	68	22	21	62	31·0
Whooping Cough	23	16	41	20	30	28	42	3	32	22	16	25·7
Enteric Fever... ..	11	12	2	4	7	8	5	2	2	3	1	5·6
Typhus Fever	4	—	—	—	—	—	1	3	—	—	—	·8
Diarrhoea and Enteritis	80	101	145	104	114	68	78	79	77	144	40	99·0
Total	190	171	268	87	220	141	191	181	145	207	128	190·1
Rate per 1,000 of the population... ..	3·19	2·84	4·40	3·03	3·37	2·13	2·84	2·65	2·09	2·95	1·79	2·93

It will be seen the zymotic death-rate for the decennium 1902-11 was 2·93 per 1,000 of the population; more than half of this was due to Diarrhoea and Enteritis. During 1912 the total zymotic death-rate was only 1·79, which is the lowest recorded in Bootle; had it not been for the epidemic of measles, the rate would have been much lower.

NOTIFICATION OF INFECTIOUS DISEASES.

The following table shows the number of cases of infectious diseases notified during 1912.

	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average for 10 years 1902-11.
POPULATION	59,440	60,155	60,880	61,612	65,174	66,145	67,127	68,120	69,122	70,130	71,152	64,790
Smallpox ..	25	122	—	—	—	—	—	—	—	1	—	14
Scarlet Fever	321	353	269	289	338	257	498	397	288	238	189	324
Diphtheria, in- cluding Croup	34	33	48	78	74	52	68	64	54	85	58	59
Typhus Fever	15	—	—	—	—	—	1	2	—	—	—	2
Continued Fever	—	—	1	—	—	—	—	—	—	—	—	—
Enteric Fever	62	61	22	24	40	42	30	15	12	16	11	32
Puerperal Fever	1	—	—	—	6	4	8	4	2	5	2	3
Erysipelas ..	50	25	37	32	38	32	34	36	26	33	33	34
Phthisis.. ..	22	21	40	22	18	7	24	*150	123	†188	‡186	—

* Notification of Poor Law cases became compulsory.

† „ „ cases seen at voluntary hospitals became compulsory.

‡ „ „ all cases of Phthisis became compulsory.

On April 1st, 1912, the Infectious Disease (Notification) Act was extended so as to include Cerebro-spinal Fever and Acute Poliomyelitis. One notification of the former and three of the latter have been received. During the summer months, Infantile Diarrhœa is voluntarily notifiable, and 20 notifications were received.

A very valuable report, recently issued by the Local Government Board gives statistics of the incidence of notifiable infectious diseases in each Sanitary District in England and Wales, during the year 1912. The following table gives the notification-rates per 1,000 of the census population for six notifiable diseases for Bootle and certain other areas.

NOTIFICATION-RATE PER 1,000 OF THE *CENSUS* POPULATION.

	Population at the 1911 Census.	Smallpox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Puerperal Fever.	Erysipelas.
ENGLAND AND WALES ...	36,070,492	0·00	2·98	1·24	0·23	0·06	0·63
75 County Boroughs ...	11,216,213	0·01	3·46	1·34	0·28	0·07	0·74
COUNTY BOROUGH OF LANCASHIRE—							
Barrow in Furness ...	63,770	—	4·00	3·14	0·34	0·03	1·24
Blackburn ...	133,052	—	0·86	0·41	0·20	0·07	0·64
Blackpool ...	58,371	—	1·51	1·01	0·31	0·10	0·41
Bolton ...	180,851	—	1·72	0·51	0·27	0·02	0·60
Bootle ...	69,876	—	2·72	0·83	0·16	0·03	0·47
Burnley ...	106,765	—	1·09	1·08	0·28	0·07	0·98
Bury ...	59,040	—	2·34	0·22	0·10	0·10	0·69
Liverpool ...	746,421	0·00	3·80	1·31	0·13	0·05	1·15
Manchester ...	714,333	0·00	2·92	0·80	0·38	0·19	0·61
Oldham ...	147,483	—	2·45	0·33	0·12	0·07	0·67
Preston ...	117,088	—	5·05	2·02	0·40	0·02	0·44
Rochdale ...	91,428	—	4·92	0·55	0·14	0·09	0·56
St. Helens ...	96,551	—	8·63	1·40	0·45	0·03	0·96
Salford ...	231,357	—	2·36	1·05	0·32	0·11	0·77
Southport ...	51,643	—	1·32	0·93	0·11	0·05	0·48
Warrington ...	72,166	—	2·00	1·50	0·43	0·17	0·85
Wigan ...	89,152	—	1·57	0·43	0·82	0·04	0·52
Administrative County of Lancashire ...	1,738,485	0·00	2·80	0·81	0·37	0·07	0·60
Aggregate of Boroughs and Urban Districts of Lanes.	1,498,315	0·00	2·74	0·75	0·38	0·07	0·62
Aggregate of Rural Districts of Lancashire ...	240,170	—	3·03	1·09	0·25	0·07	0·49
Administrative County of Cheshire ...	676,275	0·00	2·61	1·16	0·22	0·04	0·49
COUNTY BOROUGH OF CHESHIRE—							
Birkenhead ...	130,794	—	6·05	1·12	0·18	0·14	0·63
Chester ...	39,028	—	1·10	1·13	0·13	0·03	0·36
Stockport ...	108,682	—	1·92	0·83	0·27	0·06	0·39
Wallasey ...	78,504	0·01	3·77	0·90	0·22	0·04	0·34

For each disease the Bootle rates are below those for England and Wales, and for the 75 County Boroughs. It is hoped that when the National Insurance Act has been in operation for some time, details of the incidence of all forms of sickness will be available.

SMALLPOX.

No case of this disease was notified in the Borough during the year. In England and Wales, 123 cases were notified, 84 of which occurred in towns connected with ports, including 62 in Bristol, and 3 in Liverpool. Twelve of these 84 cases were ship-borne and were notified to Port Sanitary Authorities: one of these occurred in Liverpool.

By reason of its situation, Bootle is particularly liable to be invaded by smallpox. In 1912, the European distribution of the disease included a very serious epidemic in Italy, where over 10,000 cases occurring during the first five months of the year; cases also occurred in Constantinople, Marseilles, Barcelona and Lisbon. The extra-European distribution included epidemics in India, the Canary Islands, West Coast of Africa and Brazil. A mild form was prevalent in Quebec and Montreal.

Smallpox occurring in any port within some 14 days' distance from the Mersey is a potential source of danger, owing to the fact that a very large number of seafaring men reside in the town. During the year 41 contacts were reported to the Health Department by other Sanitary Authorities, and were kept under observation.

The Clerk of the West Derby Board of Guardians has informed me that during the year, 1,085 successful primary vaccinations, and 10 successful re-vaccinations were performed by the Public Vaccinator. The former are only 51 % of the births registered. The common neglect of vaccination which has occurred during the past few years is a source of danger in a seaport which is always exposed to invasion by smallpox.

SCARLET FEVER.

During the year 189 cases of scarlet fever were notified. The Ward distribution was:—

Derby.		Stanley.		Mersey.		Knowsley.		Linacre.		Orrell.
45	...	42	...	19	...	22	...	49	...	12

The table gives a summary of the incidence of the disease since 1892 :—

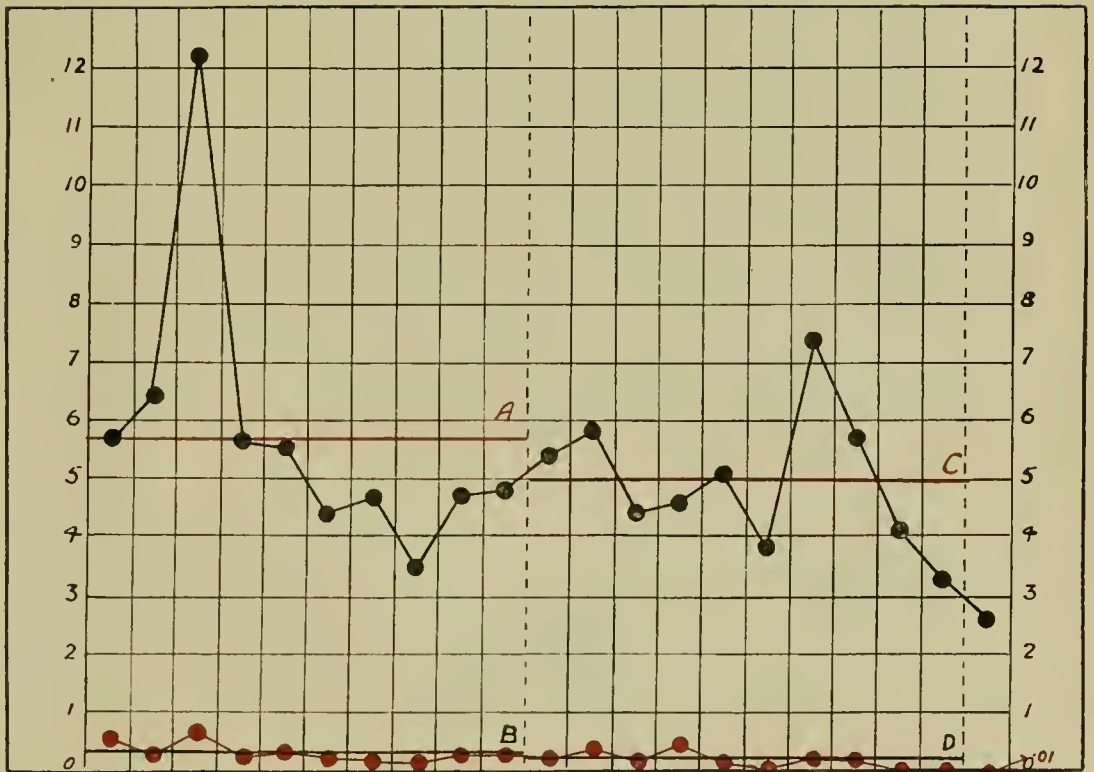
	Cases notified.	Cases notified per 1,000 of the population.	Percentage removed to hospital.	Deaths.	Death-rate per 1,000 of the population.	Case-Mortality per 100.
Annual average for 10 years 1892-1901 ...	311	5.7	43	18	.33	5.7
Annual average for 10 years 1902-1911 ...	324	5	72	14	.21	4.3
1912 ...	189	2.6	77	1	.014	.53

The chart shows the yearly notification-rate (*black line*) and death-rate (*red line*) per 1,000 of the population since 1892 :—

SCARLET FEVER.

1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912

Year.	No. of Notifications.	Deaths.
1892	289	32
1893	332	20
1894	638	36
1895	300	13
1896	297	20
1897	245	12
1898	263	10
1899	198	10
1900	270	17
1901	285	16
1902	371	14
1903	353	25
1904	269	13
1905	289	32
1906	338	14
1907	257	7
1908	498	17
1909	397	16
1910	288	6
1911	238	5
1912	189	1



A.—Notification-rate per 1,000 of the population during the decennium 1892-1901 was 5.7

B.—Death-rate during the same period was 0.33 per 1,000 of the population.

C.—Notification-rate per 1,000 of the population during the decennium 1902-1911 was 5

D.—Death-rate during the same period was 0.21 per 1,000 of the population.

During 1912, the number of cases notified, per 1,000 of the population, and also the death-rate from the disease were the lowest in the records of the Borough. As will be seen on the chart, there has been a continuous decline in the notification-rate since 1908. The table on page 27 compares Bootle's notification-rate with that of other areas. Throughout the whole of 1912, there was only one death from this once formidable disease. The death-rate per 1,000 of the population was $\cdot 014$ only, compared with $\cdot 05$ throughout England and Wales. The type of the disease is now very mild. The case-mortality in Bootle was $\cdot 5\%$, and in England and Wales it was $1\cdot 8\%$. These compare with one of 10 or 12% some 20 years ago. The fact that the cases are mild makes it no easy matter to efficiently control the disease, as a case may be so mild that a doctor is not called in.

An Inspector makes enquiries into each notified case, and visits the house from time to time until all danger from spread of infection has passed. He also visits the homes of all patients recently discharged from hospital. Printed and verbal instructions are given to parents on the discharge of their children, pointing out the desirability of keeping the patients for some days away from other children, but these are seldom observed.

An effort was made in each case to determine the source of infection. Including "return" cases, there were 43 or 22% in which the source of the infection was fairly obvious. In an additional 43, there was some evidence pointing to a source, but a definite origin could not be found. In the remaining 56% the source of infection was entirely unknown. Thirty-nine notifications were received during the first quarter; 43, 50 and 57 during the second, third and fourth. The age-distribution of the cases is shown in Table II at the end of this report. 52 cases, of whom 1 died, occurred in children below school age, 114 cases in school children, and 23 cases in those above school age.

SCHOOL			Attack- rate per 100 scho- lars on the rolls	SCHOOL.			Attack- rate per 100 scho- lars on the rolls.
		Number of cases of Scar- let Fever				Number of cases of Scar- let Fever	
Linacre . . . . .	...	14	1.46	St. John's . . . . .	...	4	0.51
Gray Street . . . . .	...	14	1.4	St. Winefride's . . . . .	...	2	0.22
Bedford . . . . .	...	15	1.1	St. James' . . . . .	...	1	0.06
Hawthorne Road . . . . .	...	9	0.92	Boys' Secondary School		1	—
Salisbury Road . . . . .	...	12	0.83	Girls'		0	—
St. James' Select . . . . .	...	4	0.78	Two Private Schools . . . . .	...	6	—
St. Mary's . . . . .	..	7	0.77	Twelve Schools, Elemen- tary and Secondary, outside Borough . . . . .	..	15	—
Christ Church . . . . .	...	5	0.62				
Orrell . . . . .	...	5	0.61				

92 cases occurred in the Public Elementary Schools of the Borough and the attack-rate was '76 per 100 on the rolls.

“ RETURN ” AND MULTIPLE CASES.

Return Cases.—These are cases of Scarlet Fever who have *presumably* contracted the disease from a patient recently discharged from hospital. There were altogether 11 such during the year, which is 6·7% of those discharged from hospital; but as will be shown, in at least 4 of these, it is very probable that the infection was not contracted from the patient who had recently returned home. The days elapsing between the discharge of the supposed infecting cases and the day upon which the rash appeared in the corresponding return cases were:—1, 2, 4, 4, 5, 10, 11, 11, 18, 18, and 32. Five families only were involved in these cases. In one family a child developed Scarlet Fever 32 days after the return of her brother from the hospital. It is quite possible that in this case the brother was not the infecting agent. Two return cases occurred in each of 3 families. In the first of these, the child suffered from post-nasal discharge whilst in hospital, but this had entirely cleared up when she was discharged after a residence there of 50 days: her brother developed Scarlet Fever 4 days, and her sister 11 days' later. In another family a patient left the hospital on September 21st, after being an inmate there for 44 days. He had no complications whilst in hospital. On October 4th his ear began to discharge and on October 9th his two brothers developed Scarlet Fever. In a third case a child returned home on December 19th, and subsequent cases occurred 10 and 11 days later in the house of a relation with whose children he had played. The disease in the infecting patient was uncomplicated. In one family four “ return ” cases occurred. The history of these cases is very interesting. A girl after 100 days' stay in hospital, during which she had suffered from cervical adenitis and nasal discharge was sent home apparently well and free from all discharges on April 9th. On the morning *before* this Patient returned home, her brother took ill, and the rash of Scarlet Fever appeared a few hours after her arrival. The following day her sister developed Scarlet Fever, and on April 14th another brother. It is very probable that none of these were true “ return ” cases, that the first brother was infected from an outside source, and his sister and brother contracted the disease from him and not from the case recently discharged from hospital.

The progress of the disease in the last three cases was normal: they were typical mild cases and were discharged from hospital on May 31st. They

were received at a friend's house and remained perfectly well until June 21st when they returned home. On June 25th another sister contracted the disease. It appears that a certain small number of cases of Scarlet Fever are of an "infecting" type. These cases often have a persistent discharge, but they may run the usual normal course of the disease and be quite free from discharges. It is very probable that "carrier" cases of Scarlet Fever occur which are similar to those of Diphtheria and Enteric Fever. Until some bacteriological method of diagnosing the disease is available, it will be very difficult to control these "infecting" or "carrier" cases. In the meantime, every case is carefully examined before discharge from the hospital, and no one is allowed to leave until he or she has apparently completely recovered.

In the houses from which a first case had been removed to hospital, 292 susceptible children remained at home. Twenty-two of these developed Scarlet Fever, whilst the first case was in hospital. Fourteen of these cases were notified within a week of the first case; the remaining eight at intervals, varying from ten to twenty-six days. Three subsequent cases were reported from the houses in which the first case was nursed at home; there were forty-six susceptible children in these houses. It was only where isolation was considered to be efficient that the patients were not removed to hospital.

Total number of houses where :—	No. of houses.	Cases nursed at home.	Cases sent to Hospital	Total cases.
One member of family attacked	105	27	78	105
Two members ,, ,, ,,	22	16	28	44
Three ,, ,, ,, ,,	6	—	18	18
Four ,, ,, ,, ,,	3	—	12	12
Five ,, ,, ,, ,,	2	2	8	10
	137	45	144	189

Multiple cases occurred in thirty-three dwellings which represent 24% of the infected houses. The total number of cases which occurred in these houses was eighty-four. In fifteen cases, the first intimation of the existence of scarlet fever in a house was the receipt of notifications relating to two or more members of the family.

The continuous decline in the number of cases during recent years makes it appear as if the long-expected result of the provision of institutional treatment for Scarlet Fever is at last producing a marked reduction, not only in the number of cases notified, but to a much greater extent in the number of deaths owing to a lessened severity of the disease.

DIPHTHERIA.

Fifty eight cases of this disease were notified during the year.

The ward distribution was :—

Derby.	Stanley.	Mersey.	Knowsley.	Linacre.	Orrell.
18 ...	21 ...	9 ...	2 ...	5 ...	3

Twenty-three notifications were received during the first quarter: eight, fourteen, and thirteen in the second, third and fourth.

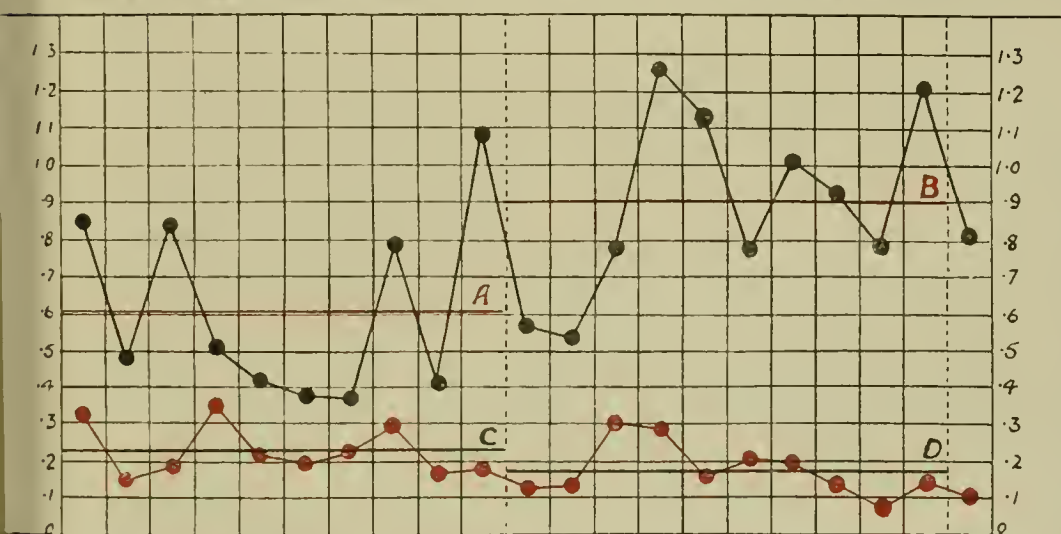
The age distribution of the cases is shown in Table II at the end of this report. There were eight deaths corresponding to a death rate of $\cdot 11$ per 1,000 of the population, which is the same as that throughout England and Wales. Twenty-two cases with seven deaths occurred in children below school age; thirty-one cases with one death in children of school age; five cases and no death in persons above school age.

The case-mortality amongst the younger children was thus 22%; amongst those of school age it was 3·2%, the total case-mortality being 13·7%. The notification rate per 1,000 of the census population was $\cdot 83$, and compares very favourably with that for England and Wales which was 1·24.

The chart shows the yearly notification-rate (*black line*) and death-rate (*red line*) per 1,000 of the population since 1892.

DIPHTHERIA AND CROUP (MEMBRANOUS).

1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912



A.—Notification-rate per 1,000 of the population for the decennium 1892-1901 was 0·61.

B.—Notification-rate per 1,000 of the population for the decennium 1902-1911 was 0·91.

C.—Death-rate for the same period was 0·23.

D.—Death-rate for the same period was 0·18.

Year.	No. of Notifications.	Deaths.
1892	43	17
1893	25	8
1894	44	10
1895	27	19
1896	23	12
1897	21	11
1898	21	13
1899	45	17
1900	24	10
1901	64	11
1902	34	8
1903	33	9
1904	48	9
1905	78	18
1906	74	11
1907	52	14
1908	68	14
1909	64	10
1910	54	6
1911	85	11
1912	58	8

The increase in the number of notified cases of diphtheria, which is recorded on the chart as having occurred during the past few years is probably due not to an actual increase in the number of patients who suffer from "clinical" diphtheria but to the fact that many mild cases which would previously have escaped notice are now diagnosed by bacteriological methods. The decrease in 1912 was owing to the absence of the usual autumnal increase in the number of cases, which occurred not only in Bootle, but throughout the whole of England and Wales, and was possibly associated with the cool, wet summer.

The following table which gives particulars of the cases of diphtheria and membranous croup notified in Bootle during the past year and the preceding ten years shows that, fortunately, the death-rate is not increasing commensurately with the notification-rate.

	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average for 10 years 1902-1911.
Number of cases notified	34	33	48	78	74	52	68	64	54	85	58	59
Number of deaths ...	8	9	19	18	11	14	14	10	6	*11	8	12
Death-rate per 1,000 of the population ...	·13	·14	·31	·29	·16	·20	·20	·14	·08	·15	0·11	0·18
Number of cases admitted to hospital ...	25	20	35	49	42	36	37	42	39	60	38	38
Number of deaths in Corporation Hospital	2	4	12	9	7	7	6	5	4	6	5	6·2
Number of cases requiring tracheotomy ...	8	4	9	8	11	8	1	3	4	9	1	6·5
												1902-1911 1912.
Case-mortality amongst those nursed at home ...	...					...	...	= 28·2%		15·%		
Case-mortality amongst those treated in hospital	...					...	...	= 16·1%		13·1%		
Total Case-mortality	...					...	...	= 20·3%		13·7%		

* Of the 11 deaths registered in 1911, 3 were of cases notified in 1910.

There is no doubt that the death-rate and case-mortality from Diphtheria would be much less if cases were brought under treatment and anti-toxic serum administered earlier. In hospital, where anti-diphtheritic serum is administered to all cases of diphtheria within a few hours of their admission there were five deaths: the patients were admitted on the third day of the disease in two cases, on the fourth in two others, and on the fifth in one. Had these cases been admitted on the first or second day of their illness, they might have recovered. It is unfortunate that the general public often neglect to obtain medical advice until several days after the onset of the disease. Swabs from throats are examined at any time at the request of a medical practitioner.

During the year, 9 cases occurred amongst the children attending one school, 8 in those attending another. In 5 schools no case occurred.

Enquiries were made into each notified case, but in a large percentage the source of infection could not be traced. In only 22% was a more or less definite source discovered in the form of a person who had been notified to be suffering from diphtheria and who had been in contact with the patient. In twenty-two houses in which a case of diphtheria had occurred, some sanitary defect, usually of a minor character, was found.

During the year 72,000 units of diphtheria anti-toxin were supplied gratis to medical men for the use of their more necessitous cases; 7 practitioners availed themselves of this privilege on behalf of 10 patients.

In diphtheria, multiple cases are not so common as in scarlet fever; the following table shows the incidence of these:—

				No. of	Cases		Cases	Total	
				houses.	nursed	removed	Hospital.	Cases.	Cases.
					at home.	to			
One member of family attacked	...	51	..	18	...	33	..	51	
Two members	„ „	2	...	2	...	2	...	4	
Three	„ „ „	1	...	—	...	3	...	3	
				54	...	20	...	38	...
								58	

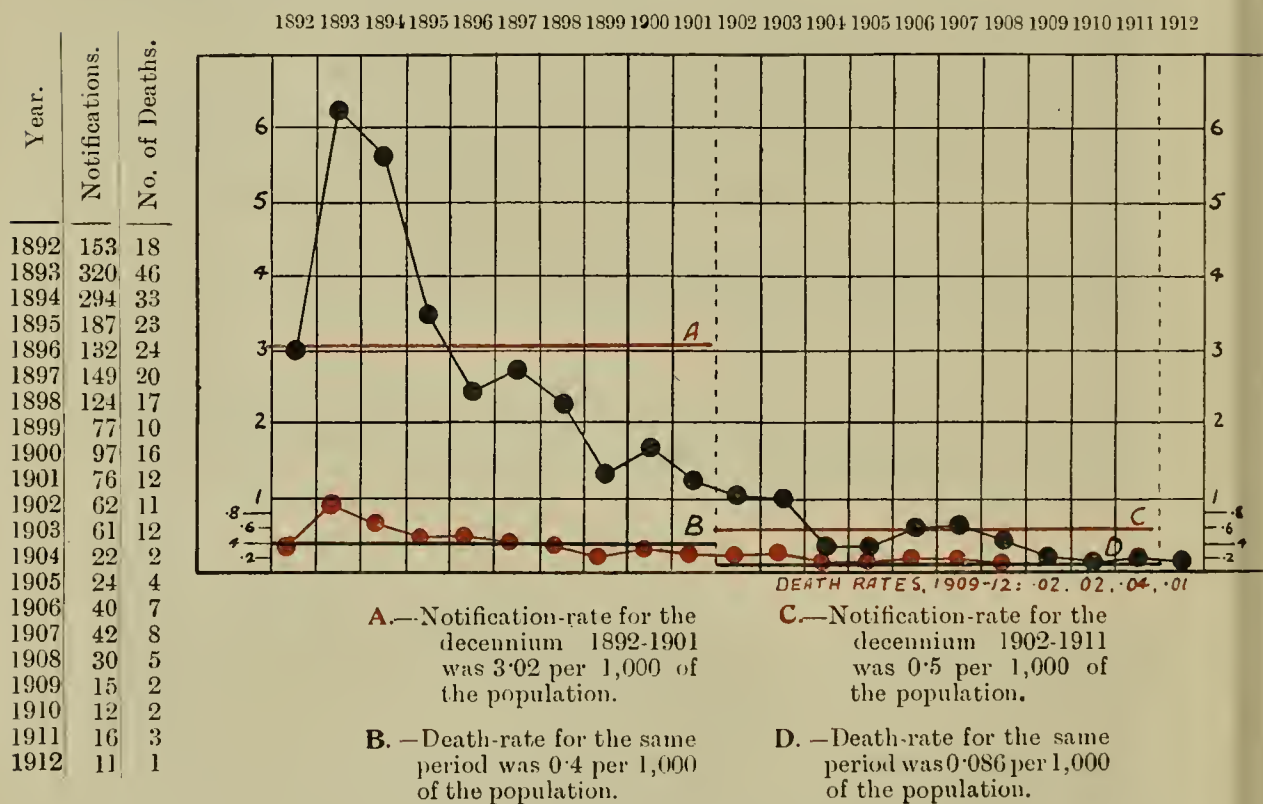
ENTERIC FEVER.

During 1912, only one death occurred from this disease. The death-rate was 0·01, which is much less than the rate, 0·04, for England and Wales. The fatal case was ship-borne. Two patients who recovered were sailors who contracted the disease abroad.

Eleven notifications were received, 5 cases were removed to Linacre Hospital; in 2 of these, both ship-borne, the diagnosis was confirmed bacteriologically. Three cases were nursed at home, and the remaining 3 were treated at the Bootle Borough, Walton and Mill Road Hospitals respectively. The notification-rate was ·16 per 1,000 of the census population, and as will be seen from the table on page 27 it may be regarded as very satisfactory.

The conversion of privies into water-closets which was commenced in 1893, and completed in 1906, has been more than justified by the diminished sickness and death-rates from enteric fever alone. The Corporation paid half the cost of the conversions. Since the inclusion of Orrell in the Borough, practically all the privies of that district have been abolished.

The chart shows the yearly notification-rate (*black line*) and death-rate (*red line*) per 1,000 of the population since 1892.



TYPHUS FEVER.

No case of this disease has been reported in Bootle since 1909, but six cases were reported in the neighbouring City of Liverpool during 1912.

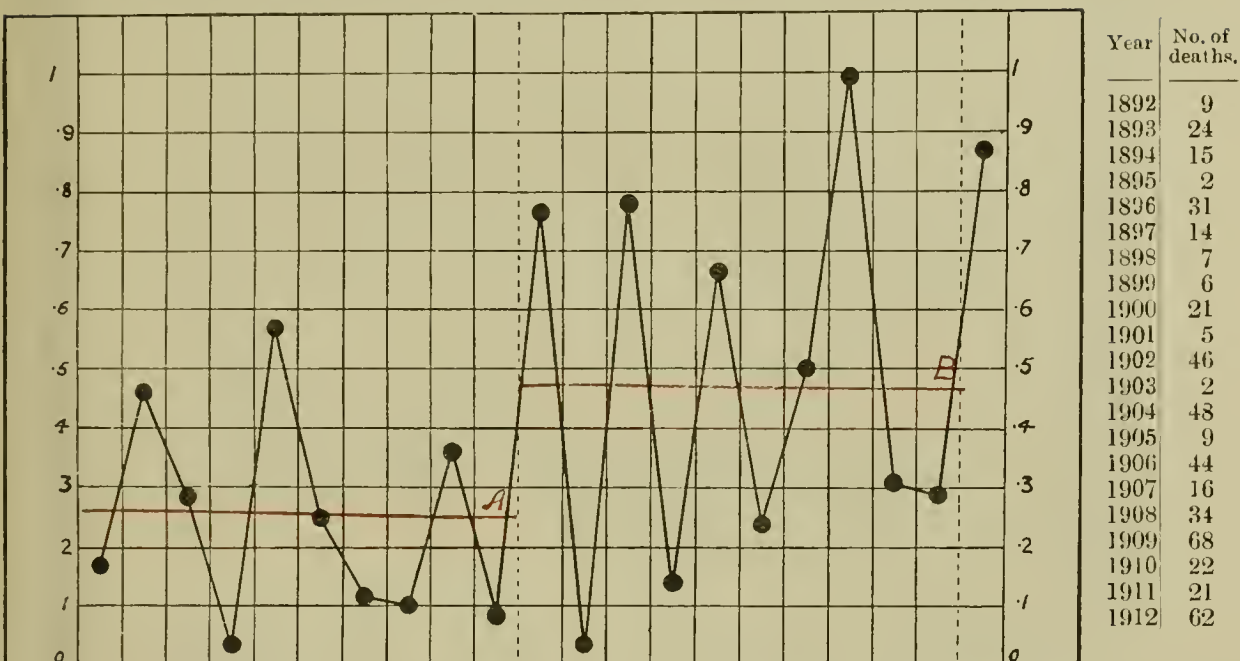
MEASLES.

During 1912 there was a severe epidemic of Measles in both Liverpool and Bootle. In Bootle it caused 62 deaths, which is a death-rate of 0·87 per 1,000 of the population. The rate for England and Wales was ·35. The following chart shows the mortality from this disease in Bootle since 1892.

MEASLES.

Chart showing the number of deaths from Measles per 1,000 of the population for the past 21 years.

1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912



A.—Death-rate from Measles per 1,000 of the population for the decennium 1892-1901 was 0.24.

B.—Death-rate from Measles per 1,000 of the population for the decennium 1902-1911 was 0.47.

The following table shows the death-rate from measles at different age groups :—

Age.	Under 1 year	1 to 2.	2 and under 5	5 and under 15.	15 years and older
Number of Deaths...	8	25	24	5	—
Death-rate ...	3.7	14.6	4.6	0.31	—
	Per 1,000 births.	Per 1,000 of the estimated population at these age groups.			

Four of the five deaths of persons between the ages of 5 and 15 years were of children aged 5, the other was 6 years old.

After a decreased prevalence for two years, measles was again expected to appear in 1912 in epidemic form. Three cases were notified from the Education Department in January, none in the next three months, 4 in May, 21 in June, 19 in July, none in August (school holidays), 12 in September, 1 in the first week of October, 4 in the second, 35 in the third, then a very large number weekly until the end of the year, a maximum of 65 cases being notified in the second week of November.

The virulence of the epidemic was due to the frequency with which broncho-pneumonia was associated with the disease; this very common complication was a source of much confusion to ignorant mothers, who regarded "measles" as of no account, and hence failed to call in a doctor until the patient was almost moribund. The fact that measles, when acquired after the age of 5 years, owing to an increased power of resistance, does not often lead to a fatal termination, makes it very necessary that children should be protected from attack as long as possible, and not wantonly exposed to it (as is so often done now), in order that they may "get it over." It is not sufficiently recognised that measles is most dangerous to young children: the number of deaths was over six times the sum of those due to Scarlet Fever, Diphtheria, and Enteric Fever. In each of three families in 1912, two children died of the disease. The difficulty of dealing with an epidemic of measles is due to the fact that the rash does not appear until the fourth day, and until then it is usually regarded as a common cold. During these four days the discharges from the child are infectious, and many others may contract the disease before the patient is isolated.

The disease spread from one school to another, but the incidence was never very great in more than one or two schools at the same time. Exclusion of individual children was carried out, and in most schools this was found sufficient to cope with the epidemic: but, before the end of the year it became necessary to close three Infants' Departments out of the twelve in the town, because of the excessive number of cases which occurred there. St. James' Infants' Department was the first in which closure was necessary. On October 7th two cases were notified, on the 14th two others, 15 on the 16th, and 29 between the 16th and the 23rd. These 48 cases, together with 24 contacts who were excluded, represented 17% of those on the roll, and the Department was closed from October 25th until November 4th. During this period the school was disinfected and cleansed. On re-opening, the scholars were medically examined, and all suspects excluded. During the time the school was closed five cases occurred, and in the month following the re-opening, two others. The Infants' Department of Salisbury Road School was closed from November 22nd until December 9th, owing to the fact that 18% of the children were absent because of measles, and of Christ Church from November 19th until December 9th, because 22% were absent. In neither of these schools did any case occur within a month of the re-opening. Owing to the distribution of these cases amongst many classes of the departments, class

closure did not appear to offer a satisfactory solution in any of the above schools, but this was successfully adopted in the case of the babies' class at St. John's School. It is unfortunate that a special "grant" is only payable when the whole department is closed. During the closure of the day schools, the infants' classes of the Sunday schools usually attended by the excluded children were closed at the request of the Medical Officer of Health.

Picturedromes remained open. Enquires were made concerning the attendance of cases of measles at these places of entertainment, but according to the information received, it was only occasionally that there was any probability of the disease having been contracted there.

During the year, the names and addresses of 293 cases of measles and 67 contacts were notified by teachers, or the school attendance officers. Several other cases were discovered by house-to-house visitation in affected districts. At first there was some delay in the receipt of notifications from some of the schools. A circular letter was addressed to the Head Mistress of each Infants' Department requesting that *immediate* information be sent of any child who was absent because of measles or suspected measles, and that all children suffering from those symptoms which accompany its onset be sent home, and their names notified to the Health Department. After the date of this letter, there was considerable improvement, and the cases were generally brought to notice within a few days of the appearance of the rash, in some instances even before the rash appeared. Several cases were discovered, in which susceptible children had continued to attend school, because the teachers had not been informed of the presence of measles in the home. An enactment requiring the notification, by the parent to the Head Teacher, of measles occurring in the home of any of the scholars would be valuable. A disadvantage of school closure is that the main avenue of information as to the names and addresses of the children is lost. Notification by medical men of the first case in a house would not be of great value, because a doctor is not often called in, before a serious complication has arisen, to those cases in which supervision by the Sanitary Authority is most required. The Lady Inspectors visited all cases, excluded the patients, all contacts who attended Infants' Departments, and all, whatever their age, who were said not to have had measles. In some instances, all contacts were excluded. The subject of exclusion of school children is fully dealt with in the School Medical Officer's report. Leaflets giving information concerning

measles were freely distributed in the schools, and at house-to-house visitations. The Inspectors endeavoured to secure efficient isolation of the patients, but this was often almost an impossibility. Better nursing, either in hospital or at home is required for severe cases. It is unfortunate that there is no hospital accommodation for this disease.

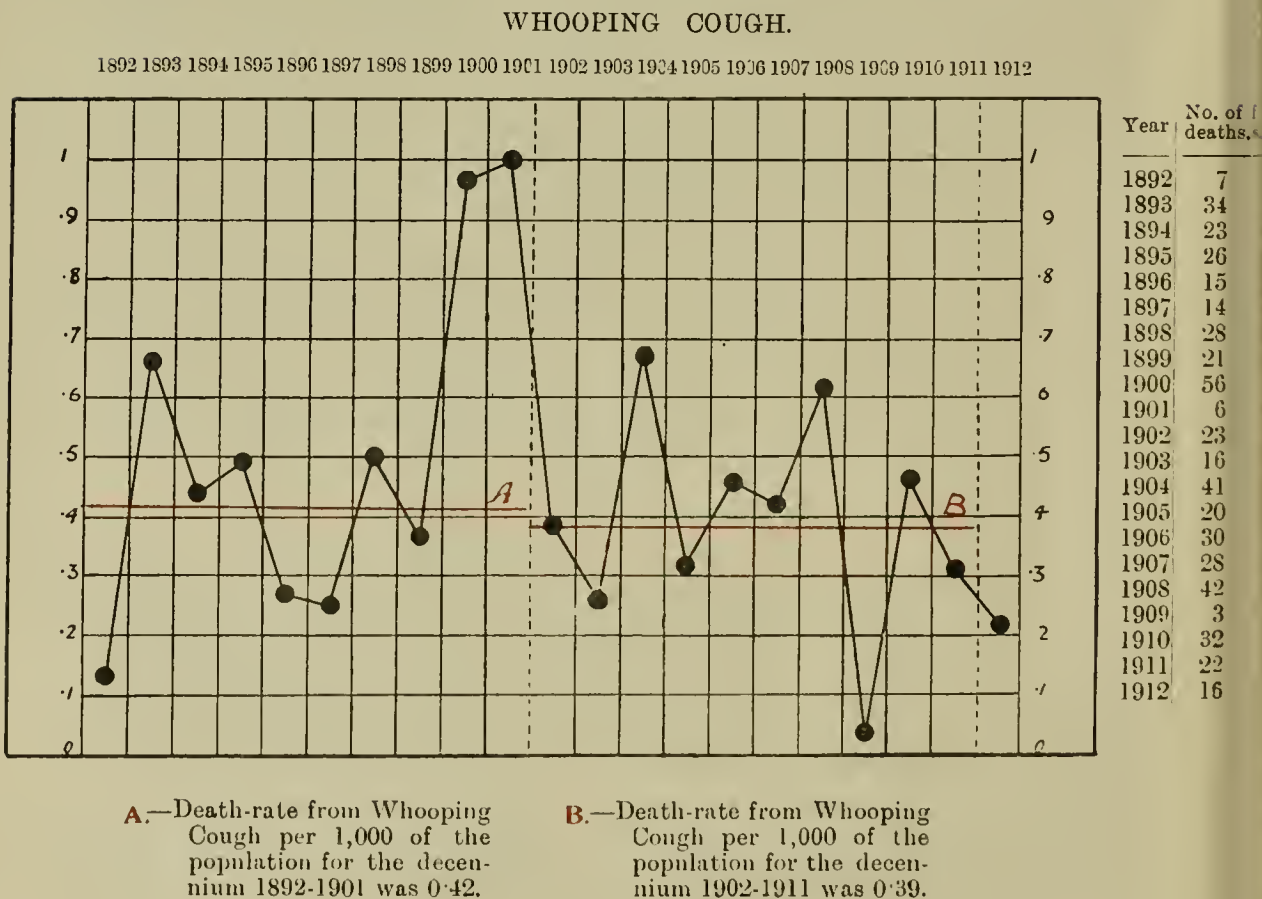
In certain cases, including all those in which the request was made, disinfection of the infected room was performed.

WHOOPING COUGH.

Whooping cough caused 16 deaths during 1912. This is equal to a rate of 0.22 per 1,000 of the population.

The death-rate from this disease throughout England and Wales was 0.23 per 1,000.

The death-rate for each year since 1892 is shown in the chart.



The numbers of deaths at each age group and the death-rates in these groups are as follow :—

Age.	Under 1 year.	1 to 2.	2 and under 5.	5 and under 15.	15 years and older.
Number of Deaths...	8	2	5	1	—
Death-rate ...	3·7	1·1	0·9	·06	—
	Per 1,000 births.	Per 1,000 of the estimated population at these age groups.			

Seventy cases and 22 contacts were notified to the Health Department by the Education Authority. As in cases of measles, an inspector visited each notified patient and gave instructions concerning isolation. The parents were also recommended to call in the aid of a medical man, and sometimes this advice was acted upon. Similar difficulties prevent efficient control of both measles and whooping cough, but the latter has not lately appeared in the form of a severe epidemic. Parents, however, regard it with a little more respect than measles, but they do not, as a rule, call in a doctor until the children are very ill with some complication. Forty-four per cent. of the school children medically examined last year had suffered from whooping cough before admission to school, compared with 68·8 per cent. from measles.

CASES OF INFECTIOUS DISEASES REPORTED BY THE EDUCATION AUTHORITY.

In addition to the 360 cases and contacts of measles and 92 cases and contacts of whooping cough reported by the Education Authority to the Medical Officer of Health, there were also reported 81 cases of chickenpox and 19 contacts, and 24 cases of mumps—to these 1,382 visits were paid. A table in the School Medical Officer's Report gives particulars of the Schools attended by children suffering from these diseases.

CEREBRO-SPINAL FEVER.

This disease which occasionally occurs in epidemic form was made compulsorily notifiable from April 1st, 1912. Only 1 case was notified, a child aged 7 months, who died a few days after notification. Cerebro-spinal fluid will be examined at the request of any practitioner.

ACUTE POLIOMYELITIS.

This is an affection, commonly known as infantile paralysis, which generally attacks young children. In the usual type of the disease, after

suffering from an acute febrile illness for a few days, the patients are noted during convalescence to be paralysed in some part of the body. Some of the paralysed muscles gradually recover their strength, but generally some permanent paralysis results, and leaves the child crippled for life. During the past few years, serious epidemics have occurred on the continent of Europe and in America : lately small outbreaks have been reported in England. Nothing definite is yet known as to the mode of conveyance of the disease. The infecting agent, which has been discovered by experiments on monkeys, is so small that it can pass through the finest filter, and has not yet been demonstrated under the microscope.

Three notifications have been received since the disease became compulsorily notifiable on April 1st, 1912. They were all in the late paralysed stage : the source of infection could not be discovered in any. The resulting lesions were paralysis of the right foot in one case, of the right shoulder in another, and weakness of both legs in the third.

ERYSIPELAS.

Thirty-three notifications of this disease were received, or 0·47 per 1,000 of the census population, which compares favourably with a rate in England and Wales of ·63. Most of the cases were slight, but one was fatal. In a few cases, application for hospital treatment was made, but owing to lack of accommodation, the patients could not be admitted.

SCHOOLS.

The schools are regularly inspected, and several, more or less serious, sanitary defects have been rectified during the year. The Medical Officer of Health is the School Medical Officer, and full details of the work of inspection of schools and scholars are given in his report to the Local Education Authority.

DIARRHŒA AND ENTERITIS.

The summers of 1911 and 1912 clearly demonstrate the relationship between atmospheric temperature and the number of deaths from these diseases. The death-rate from diarrhœa and enteritis of children under the age of two years, during the year 1911, when the weather during the summer was

almost tropical, was 57·5 per 1,000 births ; during 1912, when there hardly was a “summer” in the generally accepted sense of the term, the rate was only 15·5, which is a decline of 72%.

The official classification includes deaths from gastro-enteritis, gastro-intestinal catarrh, muco-enteritis and colitis. In this portion of the report, to save repetition, the term “diarrhœa” is used to include enteritis and all the above-named diseases.

The deaths at all ages numbered 40, which is a rate of ·56 per 1,000 of the population ; the age distribution and death-rates are :—

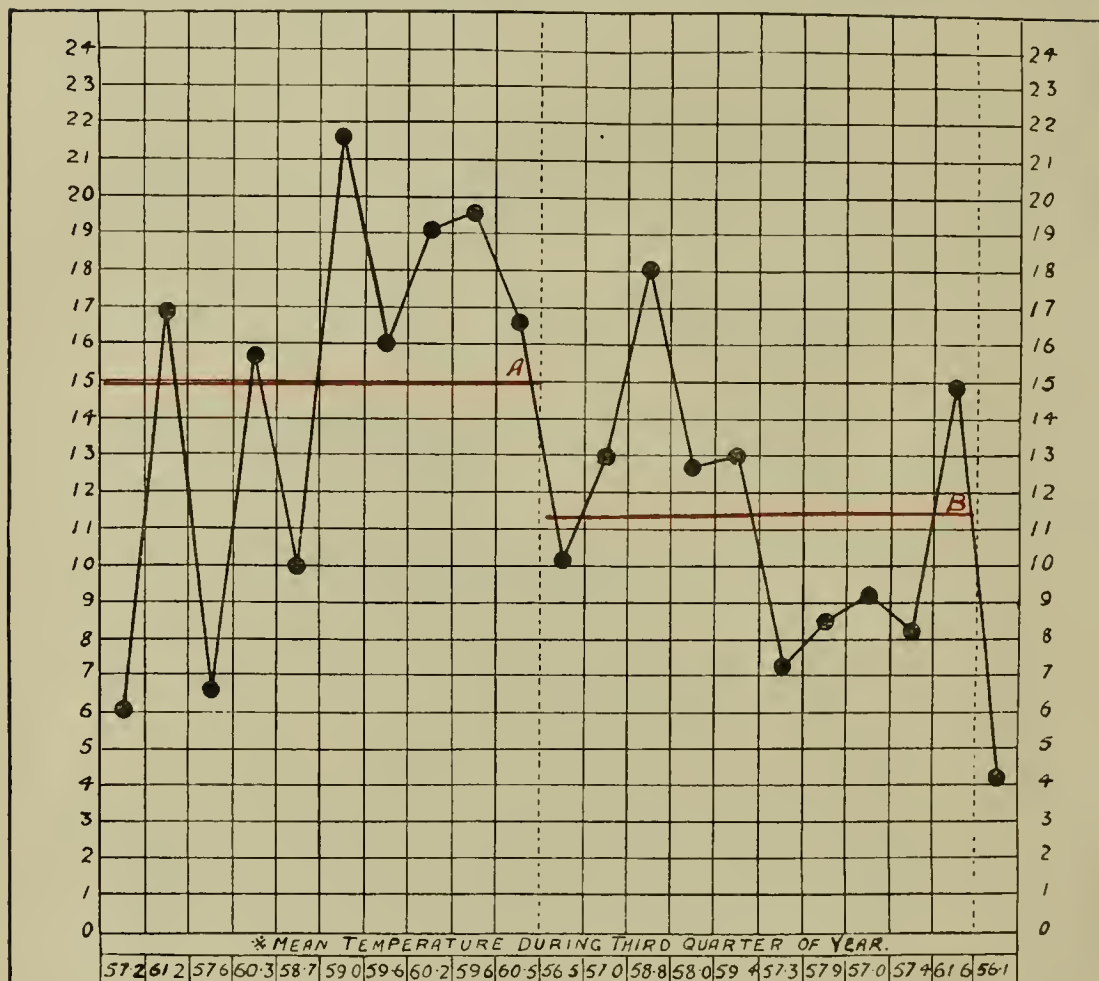
Age in years ...	Under 1	1-2	2-5	5 and under 45	45 and under 65	65 and upwards
Number of deaths	25	8	4	—	2	1
Death-rate ...	11·7	4·6	0·77	—	0·1	0·4
	per 1,000 births.	per 1,000 of the estimated population at these age groups.				

The epidemic form of the disease generally occurs in children under the age of 2 years. The death-rate in children under that age per 1,000 births throughout England and Wales was 8·5 and in the 95 great towns it was 10·8, compared with a rate in Bootle of 15·5.

The chart shows the death-rate from diarrhœa per 1,000 of the population under 5 years, of children under 5 for the past 21 years, and also the mean temperature at Bidston Observatory during each third quarter. It is impossible to give the figures for children under 2 for more than the past few years. As a comparative statement, the graph of the death-rate under 5 is of almost equal value.

DIARRHŒA AND ENTERITIS.

1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912



Year	No. of Deaths (under 5 years)
1892	38
1893	109
1894	42
1895	102
1896	66
1897	144
1898	109
1899	132
1900	138
1901	119
1902	74
1903	96
1904	135
1905	96
1906	104
1907	59
1908	70
1909	75
1910	70
1911	128
1912	37

A.—Death-rate from these diseases for the decennium 1892-1901 was 15.0 per 1,000 of the population under 5.

B.—Death-rate from these diseases for the decennium 1902-1911 was 11.4 per 1,000 of the population under 5.

* Supplied by Mr. Plummer, M.A., of the Bidston Observatory.

The number of deaths from Diarrhœa of children under two was:—

1911. 1912.		1911. 1912.		1911. 1912.		1911. 1912.	
Jan. ...	2 0	April... 2	3	July ...	16 2	Oct. ...	8 4
Feb. ...	0 4	May... 2	4	Aug. ...	53 7	Nov. ...	3 2
March	2 0	June... 1	0	Sept ...	32 6	Dec. ...	1 1
	4 4		5 7		101 15		12 7
		1911.		1912.			
Totals	...	122		33			

It will be noted that a small number of deaths occurs throughout the whole of the year, but when the weather is inclement, as in 1912, there is not the great epidemic during the third quarter of the year which occurs when the temperature is high and the rainfall scanty.

As has been the custom since 1907, medical practitioners were requested to notify, during July, August and September, all cases of summer diarrhœa where the services of a Lady Inspector would be useful and welcome. A fee of 2/6 was paid for each of the 20 notifications received. Special attention was paid to these by the Lady Inspectors and 15, or 75% recovered.

The following figures relate to inquiries made into the deaths of the 33 children who were under the age of 2 years.

Twenty-five took place in Bootle and occurred in the following wards:—Derby 3, Stanley 2, Mersey 6, Knowsley 6, Linacre 7, Orrell 1. Four children whose home addresses were in Mersey Ward, died in Walton Workhouse, as also 2 whose parents resided in Knowsley Ward. One child from Knowsley Ward died in the Prison Hospital and another at the Liverpool Children's Infirmary. The following particulars concerning 18 infants, who were under the age of 9 months when they died, are of interest: 6 were said to have been fed from the breast only: 11 during the few weeks preceding their death had been fed from the bottle only; these include 3 who had been hand-fed from birth and 5 who had been recently weaned: 1 had been fed, partly from the breast and partly from the bottle. Since many more children are fed from the breast than from the bottle, it is evident that the incidence of the disease was much greater amongst the bottle-fed than the breast-fed, but it is a surprising fact that so many as 6 were reported to have been breast-fed only. The explanation seems to be that these children were infected not by the common source, their food, but by some other agent. Dirty fingers, "dummy teats" dropped on the floor and immediately afterwards pushed into the baby's mouth, readily suggest themselves as causes. In nearly every case in which a feeding bottle was necessary, the boat-shaped variety was in use: these are supplied to necessitous mothers free of charge.

The number of rooms occupied by the families in which the deaths occurred were:—

1 room.	2 rooms.	3 rooms.	4 rooms.	more than 4 rooms.	Total					
3	...	6	...	2	...	7	...	12	...	30

Three infants contracted the disease whilst in an institution.

The disease was by no means confined to the poorest classes as in evidenced by the fact that the parents of a considerable number of the children lived in houses containing more than four rooms.

Minor sanitary defects were noted in 8 of the houses in which a death had occurred.

The length of illness in the fatal cases was :—

Number of Cases	DAYS.							Under one week.	WEEKS.					Total
	1.	2.	3.	4.	5.	6.	7.		1-2.	2-3.	3-4.	over one month.	Over one week.	
	1	1	0	1	1	1	5	= 10	2	3	6	9	= 20	30

Particulars of the remaining 3 cases, who were born and died in the workhouse, were not obtainable. As a result of the experience gained in 1911, a definite plan of campaign was inaugurated for the summer of 1912. This included :—

1. Frequent visitation of infants by Lady Inspectors and Voluntary Helpers, especially in the districts where diarrhœa is usually prevalent.

2. Inspection of ash-pits, and an endeavour to secure their proper use.

3. An attempt to diminish the number of flies by urging greater domestic cleanliness, and by attacking their breeding places, e.g. (a) by emptying the ash-pits in certain districts every 10 days (the readiness with which the Sanitary Committee acceded to the request to do this was much appreciated) and (b) by having stable middens emptied each week.

4. An extra gang was engaged to flush the back passages and narrow streets; owing to the almost incessant rain, it was not necessary to employ them for more than a few weeks.

The full effect of these measures cannot yet be ascertained, as it is impossible to learn how much of the very great reduction in the number of deaths from diarrhœa in 1912 was due to the wet summer, and how much to efforts directed to the prevention of the disease.

EXTERMINATION OF RATS: PLAGUE.

During recent years, rats had become very numerous, and many complaints were made of the damage done by them. The Council, in February, 1911, appointed a rat exterminator, Mr. Thomas Burrows, who regularly visits the sewers, refuse-destroyer and other Corporation property where rats are numerous. Owners of private property were asked to co-operate with the Corporation in efforts to exterminate rats from the town. The rats are mostly

of the brown variety (English field rats) but often foreign black rats are found in warehouses and goods stations. It is now rare to receive complaints of the presence of rats. The number of rats caught in the sewers in a fortnight in December, 1910, was 340. The number caught in a fortnight of October, 1912, under exactly similar conditions was 68.

The danger of rats to Public Health is now becoming well-known, and in a seaport like Bootle, plague-infected rats are very liable to be brought from abroad, especially from India and South America.

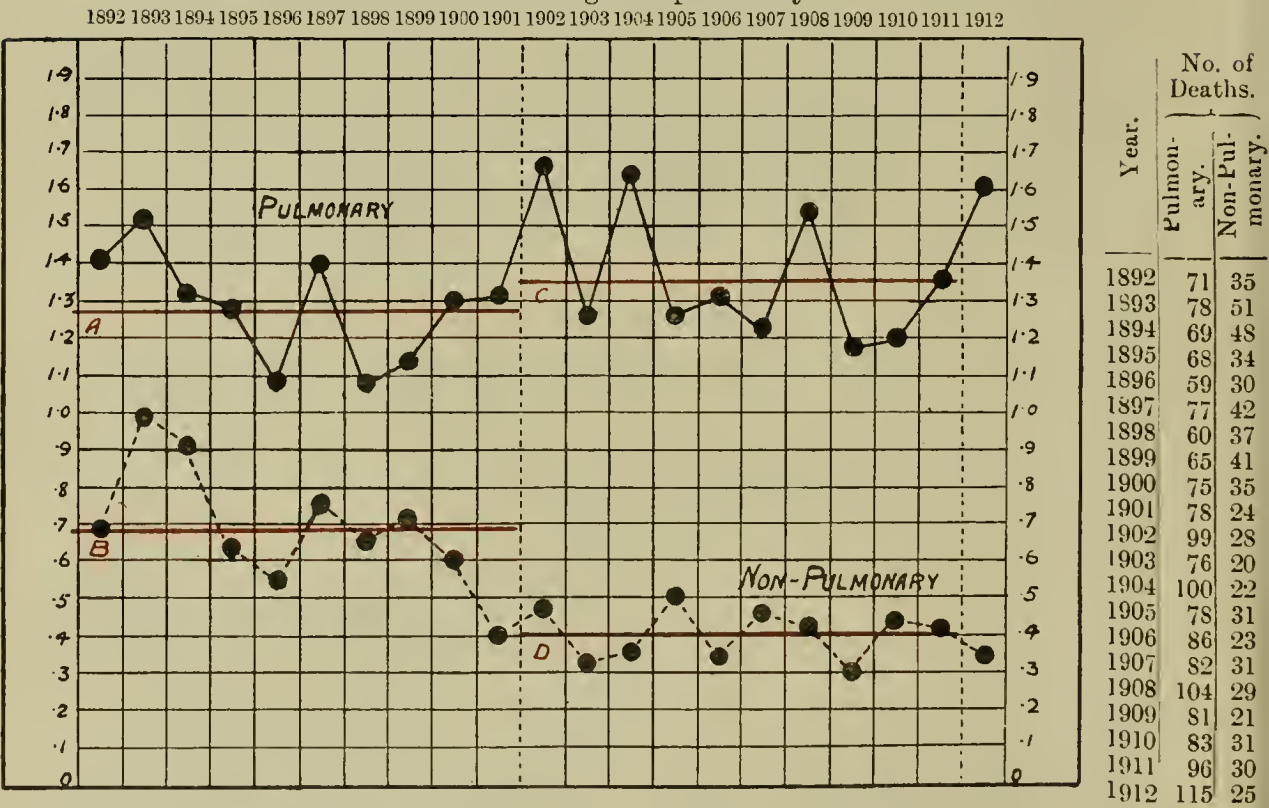
The occurrence of plague amongst men is very often preceded by an epizootic of plague in rats. Men are infected from rats by fleas which leave these animals when they die, bite men and inoculate them with the germs of the disease. Two cases of plague occurred in Liverpool in 1912, and one case was landed at the Tyne Port Hospital. Three contacts of cases were reported during the year, and were kept under observation.

On June 19th last, the police reported that dead rats had been found in a Bootle warehouse. I visited the warehouse that day, and was informed that several dead rats had recently been discovered and destroyed. I asked the keeper to let me know when the next one was found, in order that it might be bacteriologically examined. On July 1st, another dead rat was found. It was immersed in petrol to kill any fleas and sent to Professor Glynn, who was then the Borough Bacteriologist. He telephoned the same evening and stated that as the result of the post-mortem examination, he was of opinion that the rat had most probably died of plague. Subsequent investigation, lasting some four weeks, completely substantiated this opinion, and virulent plague bacilli were isolated from the animal. On July 2nd the warehouse was searched: two mummified rats were discovered, and one which was dying. The last was sent to the bacteriologist, who reported that it was not plague-stricken. It was found that several consignments of cargo had been received during the preceding months into this warehouse from plague-infected countries. Ten traps were set by the rat exterminator, and on July 3rd, three rats were caught. Bacteriological examination showed that they were healthy. Enquiries were made as to the health of those who worked in or about the warehouse, but no illness resembling plague was discovered. The rat exterminator visited the warehouse every day, and by the end of August a total of 10 brown and 14 black rats had been caught. One only, a brown rat, the first examined was infected with plague. The warehouse was kept under close observation until the end of the year, but after August, very few

rats were caught there, and they were all quite healthy. On July 10th I wrote to the owners of all the warehouses, mills and store-sheds in the Borough, and asked whether any dead or dying rats had lately been seen upon their premises. The replies were very satisfactory. In only one case had a dead rat been lately found, and in this warehouse, a virus for destroying vermin had been used. All the firms promised to let me know if any dead or dying rats should be seen upon their property.

TUBERCULOSIS.

This disease in 1912 caused 140 deaths, or one death in every nine. The death-rate per 1,000 of the population was 1·96. The latest rate published for England and Wales is for 1910, when it was 1·43. Tuberculosis has been truly called the “Great White Plague.” It is an infectious disease, and Professor Koch discovered its cause, the tubercle bacillus, in 1882. It attacks not only all parts of the human body, but also cattle, pigs, horses, dogs, cats, and birds. The commonest form in adults is that which attacks the lungs, pulmonary tuberculosis or phthisis; in children, non-pulmonary forms are commoner, and the disease often affects bones, joints, lymphatic glands and abdominal organs. Lupus is tuberculosis of the skin. The chart shows separately the death-rate per 1,000 of the population from phthisis and from other forms of tuberculosis during the past 21 years.



- A.—Death rate from Pulmonary Tuberculosis per 1,000 of the population during the decennium 1892-1901 was 1·28.
- B.—Death rate from Non-Pulmonary Tuberculosis during the same period was per 1,000 of the population 0·69.

- C.—Death rate from Pulmonary Tuberculosis per 1,000 of the population during the decennium 1902-1911 was 1·36.
- D.—Death rate from Non-Pulmonary Tuberculosis during the same period was per 1,000 of the population ·41.

PHTHISIS.

During 1912, 115 deaths were certified to be due to phthisis. This is approximately 10% of all the deaths which occurred during the year, and a death-rate of 1·61 per 1,000. It will be seen from the table on page 12 that this rate is higher than that in any neighbouring town, and is exceeded in one seaport only. The chart shows that it is the highest recorded in Bootle since 1904. In England and Wales, during 1910, the latest return available, the death-rate was 1·03.

The following table gives the number of deaths from phthisis in each ward for 1912 and the previous ten years:—

		Derby.	Stanley.	Mersey.	Knowsley.	Linacre.	Orrell.	Total.	Rate per 1,000 of the population
1902	...	11	12	35	25	16	—	99	1·66
1903	...	9	12	22	18	15	—	76	1·26
1904	...	15	12	31	31	11	—	100	1·64
1905	...	12	8	27	15	16	—	78	1·26
1906	...	6	9	27	17	21	6	86	1·30
1907	...	14	11	13	11	30	3	82	1·23
1908	...	13	12	34	16	26	3	104	1·54
1909	...	15	9	18	20	15	4	81	1·18
1910	...	10	16	19	14	19	5	83	1·20
1911	...	21	13	29	12	20	1	96	1·36
1912	...	17	12	29	28	25	4	115	1·61
Rate for the Decennium									
1902-1911		12	11	25	17	18	3	88	1·36

The rates per 1,000 of the estimated populations in the various wards are:—

		Derby.	Stanley.	Mersey.	Knowsley.	Linacre.	Orrell.
Rate for the Decennium							
1902 to 1911	...	1·0	1·0	2·0	1·4	1·3	*0·64
1912 ...	...	1·1	1·0	2·4	2·2	1·5	0·95

*For years 1906-1911 only.

The following table shows the death-rates from phthisis per 1,000 of the population during the last four quinquennia for which returns for England and Wales are available:—

	1891—1895.		1896—1900.		1901—1905.		1906—1910.	
England and Wales	1·46	...	1·32	...	1·22	...	1·11	·
Bootle 	1·48	...	1·20	...	1·43	...	1·29	

Since January 1st, 1912, all cases of phthisis have been compulsorily notifiable: cases occurring in hospital practice have been notifiable since May 1st, 1911, and Poor Law cases since January 1st, 1909. There has been a system of voluntary notification in Bootle for many years.

The following table compares the origin of the notifications with that of previous years:—

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
Notifications by Private Practitioners	22	22	21	40	22	18	7	24	26	28	20	105
Notification by Medical Inspector of Scholars ...	—	—	—	—	—	—	—	—	—	—	8	5
Cases notified by Poor Law Medical Officers	—	—	—	—	—	—	—	—	124	95	129	52
Cases notified by Medical Officers of Voluntary Hospitals	—	—	—	—	—	—	—	—	—	—	31	24
	22	22	21	40	22	18	7	24	150	123	188	186

In the above table *first* notifications only are recorded. Twenty-one second or subsequent notifications were received from private practitioners; 110 from Poor Law Medical Officers; and 12 from Hospital Medical Officers. This indicates that there is considerable transference from one doctor or institution to another.

In addition to the above, 8 cases were investigated in 1912, of which the first intimation was received from the death returns; this number for 1911 was 24, and for 1910, 34. Five cases, of which the first notification was received from the Medical Inspector of Scholars, were visited, and are included in these statistics. In addition to these cases of acute Pulmonary Tuberculosis, some 33 chronic and 28 suspected cases were kept under the observation of the Medical Inspector; they are not included here. An account of anti-tuberculosis work amongst school children is given in the School Medical Officer's Report.

The 194 cases investigated by the Public Health Department during the year were of the following ages:—

	Number who died before close of year.	Surviving cases.
Under 15 years	13	18
15-25 „	27	21
25-35 „	16	24
35-45 „	16	20
45-55 „	18	11
55-65 „	7	1
Over 65 „	1	1
	98	96

Of the 98 fatal cases, 53 were males and 45 females. Of the 96 survivors, 42 were males and 54 females.

The following table, which gives the period between notification and death of the cases which proved fatal during 1912, shows that a large number are not brought under the observation of the Health Department until they are in an advanced stage of the disease. Phthisis generally attacks a person some years before it proves fatal:—

Not notified: information taken from death returns.	Period between notification and death.										Total.
	1-4 days.	4-7 days.	1-4 weeks.	1-2 months.	2-3 months.	3-6 months.	6-12 months.	1-2 years.	2-3 years.	3-4 years.	
8	15	7	19	10	8	16	21	5	4	2	115

The following table gives the occupations of the persons whose cases were investigated during 1912.

No of cases.		No. of fatal cases.	No. of non- fatal cases.
8	Below School Age	5	3
23	School Children	8	15
45	Housewives and Widows	24	21
31	Dock Labourers	21	10
9	General Labourers	6	3
8	Domestic Servants	4	4
7	Clerks	5	2
5	Engineers	2	3
4	Factory Hands	2	2
4	Publicans	2	2
3	Carters	2	1
3	Firemen	2	1
2	Scalers	1	1
2	Ships' Stewards	1	1
2	Joiners	1	1
2	Charwomen	1	1
2	Dressmakers	1	1
2	Bakers	1	1
2	Manageresses of shops	—	2
2	Boot Repairers	1	1
2	Apprentices	1	1
22	Other employed persons	5	17
4	No occupation	2	2
194		98	96

It should be noted that 114 or 58 % were employed persons, most of whom would have come within the scope of the National Insurance Act had it been in operation during the whole of the year.

The patients whose addresses are known are visited. The adult males by a Male Inspector and all others by a Lady Inspector.

The whereabouts of 116 cases of phthisis who had been notified in previous years were known at the beginning of 1912; during that year enquiries were made concerning 194 other patients. Of the total of 310, 115 died, including 17 of the 116 previously notified; 53 were being visited at their homes at the end of the year; 28 were in Workhouse Hospitals; 14 were in other hospitals or sanatoria; including 5 insured persons at the Linacre Hospital, and 2 insured persons at the Liverpool Sanatorium, Delamere; the others, who numbered 100, had either removed out of the town, and their addresses were notified to the Medical Officers of Health into whose districts they had gone, or could not be traced. Some of the cases whose present addresses are unknown may have succumbed to the disease in other towns.

An analysis of the information contained on the enquiry forms concerning the 194 cases investigated during the year, shows that in:—

47 some other members of the family had previously died of phthisis. This illustrates the frequent occurrence of multiple cases in a family. It is due not only to an hereditary predisposition to the disease, but probably to an even greater extent to direct infection from person to person because of lack of care in the disposal of sputum,

19 had occupied two or more houses since becoming ill,

52 received Poor Law treatment only,

31 had been treated as out-patients at Voluntary Hospitals, some of these afterwards entered the Workhouse Hospitals;

45 had not received Poor Law or Hospital treatment.

The following information, concerning the isolation of the patients or the lack of it, was obtained:—

Number of cases who occupied alone a single room	64
Number who slept in a separate bed in a room occupied by another person	14
Number who slept with another person	57
„ „ „ with two other persons	35
„ „ „ in the same room as three other persons	17
„ „ „ in the same room as four other persons	7
	<hr/>
	194

In the last two groups, it was not unusual to be informed that two or sometimes three persons occupied the same bed as the patient.

These figures show that there is urgent need for the provision of isolation accommodation for the patients, and power in certain cases to make them use it. The number of cases which occurred in common lodging houses was 9, and in sub-let houses 58.

During 1912, great attention was paid to the subject of tuberculosis. The scheme proposed in 1911 for the establishment of a tuberculosis dispensary and the provision of hospital accommodation was discussed at the beginning of the year, but postponed until the effect of the Insurance Act on the position was determined. By that Act, the sum of 1/3 per annum per insured person was allocated for the provision of "sanatorium benefit." As there are about 22,000 insured persons in Bootle, the total amount available will be some £1,375 per annum, of which about £550 will be earmarked for medical attendance on cases requiring domiciliary treatment after Medical Benefit comes into operation in January, 1913. Thus £825 per annum will remain, and may be used for the upkeep of sanatorium beds, hospital beds, contribution towards an anti-tuberculosis dispensary, and the provision of medicine and special nourishment for patients receiving domiciliary treatment. By the Finance Act of 1911, a sum of £1,500,000, of which some £1,116,000 will be apportioned to England, was set aside for

the provision of institutions, including dispensaries, for the treatment of cases of tuberculosis. On the basis of the census populations £2,161 should be available for Bootle, but as tuberculosis is so prevalent in the town, an even greater amount should be obtained. A Departmental Committee of experts on Tuberculosis, under the chairmanship of Mr. Waldorf Astor, was appointed in February, 1912, to report upon the general policy which should be adopted by the Government and Local Authorities in making provision for the treatment of cases of this disease. In April, they issued an interim report, from which the following extracts are given :—

“ Cases of pulmonary tuberculosis may roughly be divided into six classes :—

1. Cases in which the disease can be diagnosed or is strongly suspected, but in which there is no evident impairment of the working capacity.
2. Cases of recent onset with some impairment of the working capacity, but without marked evidence of ill-health.
3. Cases of recent onset with evidence of acute illness.
4. Cases of a longer history of illness. In some of these cases permanent arrest of the disease may be hoped for, but in the majority, restoration to full working capacity for more than a comparatively short period is not to be looked for.
5. Cases in which there is permanent loss of working capacity. Many of these patients live for a considerable period in a condition of chronic ill-health.
6. Cases in which a fatal termination within six months is probable.”

“ Treatment in sanatoria will chiefly be necessary for cases falling within classes 2, 3, and 4, and for a small proportion of cases falling within classes 1 and 5.

The scheme recommended consists of 2 units : “ the first unit consists of a tuberculosis dispensary or an equivalent staff,” “ the second unit consists of the sanatoria, hospitals, etc., in which institutional treatment is given.” The functions of a dispensary are set out in detail in my Annual Report for 1911. A summary of such functions is “ to serve as :—

1. A receiving house and centre for diagnosis.
2. A clearing house and centre for observation.
3. A centre for curative treatment.
4. A centre for the examination of contacts.
5. A centre for after-care.
6. An information bureau and educational centre.”

“The Committee wish to express the opinion that there is no danger of infection being conveyed from the dispensaries to the occupants of neighbouring houses.”

Hospital Accommodation.—The model scheme provides one hospital bed for each 5,000 of the population ; on this basis 14 or 15 beds would be required for Bootle, but as the number of cases in Bootle is so much larger than the average throughout England and Wales, this number may not be sufficient. Hospital accommodation is required for (a) treatment and education of consumptives, (b) for cases requiring special or operative treatment, (c) for observation cases, and (d) for advanced cases who cannot be nursed at home under conditions that will ensure the patients' comfort, and the safety of those about them.

Sanatorium Accommodation.—A similar number of beds in a sanatorium will be required, viz. —14 or 15 ; “in the interests of economy, an individual sanatorium should contain not less than 100 beds.” It seems necessary to emphasise the fact that the sanatorium is for EARLY cases only.

The financial recommendations of the Committee are :—That capital grants should be made by the Local Government Board up to $\frac{1}{5}$ of the amount required for the provision and equipment of dispensaries, provided that this sum should, generally, not exceed £1 per 750 of the population.”

The report also stated “that the early establishment in working order of an adequate number of tuberculosis dispensaries is essential,” and “that, so far as possible, grants in aid of tuberculosis dispensaries should only be given where such institutions will eventually form constituent parts of complete schemes.”

They also recommended “that capital grants up to three-fifths of the cost per bed (which was estimated at not exceeding £150) should be made for the provision of additional hospital and sanatorium beds for adults, provided that the total sum should not exceed £90 per bed.”

These recommendations were approved by the Government Departments concerned, and the Local Government Board in a circular letter dated December 6th, 1912, drew attention to the following :—“The organisation of schemes must be undertaken as part of the public health administration of the area to which they relate ; and the Medical Officer of Health should be the chief executive and organising officer.”

“The Board would urge the Council to proceed at once with the organisation of a dispensary system.”

“As a general rule, the medical assistants of a dispensary should not be engaged in private general practice. In many cases their services may be also utilised as Assistant School Medical Officers.”

Many Local Authorities have prepared schemes, but a very serious obstacle, to the inauguration of a campaign in which every Local Authority would take part, has been a financial one. It has now, however, been decided that one-half the nett cost of any complete anti-tuberculosis scheme will be paid from the National Exchequer; hence the Insurance Committees will pay Local Authorities for the treatment of insured persons, and the Local Authorities and the National Exchequer will share equally the cost of treating non-insured. A scheme has been proposed for Bootle, in which, as is suggested by the Local Government Board, the Tuberculosis Officer shall be a whole-time official who will devote a certain amount of his time, say, two-fifths, to work in Bootle, and the remainder to work in the adjoining portion of the administrative county. The salary of such an officer should be at least £400 per annum. The Resident Medical Officer at the Hospital for Infectious Diseases would act as Assistant Tuberculosis Officer. The annual cost of a dispensary and staff, including tuberculosis nurse, dispenser, etc., would be some £723 per annum. The payment of this sum would be thus allocated: approximately half would be paid by the Insurance Committee for the services of the Tuberculosis Officers as advisors of the Committee, and for the treatment of insured persons. The remaining half would be paid in equal portions by the Treasury and the Local Authority, each of whom would thus be responsible for about £180 per annum.

Hospital Accommodation.—A temporarily disused typhoid pavilion in the Linacre Hospital has been altered, and is now suitable for the treatment of cases of tuberculosis. During the latter portion of the year, six beds were almost continuously occupied by insured persons, the Insurance Committee paying 25/- weekly per patient. Plans and estimates are now before the Local Government Board for the partial re-construction of the old smallpox pavilion, in order to make it suitable for some 14 cases of phthisis; non-insured persons can then be admitted.

Sanatorium Accommodation.—It was hoped that a joint Sanatorium would be erected in conjunction with neighbouring County Boroughs, but difficulties have arisen which seem to indicate that such a proposal cannot be carried out. If unfortunately, the scheme falls to the ground, it will probably be necessary to rent beds in some neighbouring institution, as the Local Government Board recommend that individual sanatoriums should contain not less than 100 beds.

In view of the fact that there were 115 deaths from phthisis in 1912, it is probable that there are over 500 cases of this disease in the town. Only a proportion of these are now known to the Sanitary Authority, but when a dispensary is established and all "contacts" are examined, it is hoped that a larger number will be discovered. Excluding better class patients, who can afford to obtain appropriate treatment, it is estimated that about one half the number of phthisical patients will be "insured persons." Sanatorium Benefit came into operation in July, 1912, and all insured tuberculous persons who have applied for the benefit, have received treatment. In the absence of a dispensary, three varieties of treatment were available; Sanatorium, Hospital and Domiciliary. The Medical Officer of Health, with the concurrence of the Town Council, was appointed Medical Adviser of the Insurance Committee. Before the close of the year, 43 applications, relating to 32 persons were received: one patient was not suffering from tuberculosis; two were sent to the Liverpool Sanatorium, Delamere Forest; eight were treated in the Corporation Hospital; and one at the Liverpool Chest Hospital: twenty received domiciliary treatment. In 1912, no treatment was provided for non-insured.

NON-PULMONARY TUBERCULOSIS.

The problem of pulmonary tuberculosis, though it certainly is the most important, does not, unfortunately, deal with the whole tuberculosis question; for, in Bootle, in 1912, 25 deaths, mostly of children, occurred from non-pulmonary tuberculosis. An exact record of the number of non-pulmonary cases will not be available for some time, as their compulsory notification did not come into operation until February, 1913. It has now been proved that bovine tuberculosis can be transmitted to human beings. The varieties of the disease in which tubercle bacilli, similar to those found in cattle, have been discovered are primary abdominal tuberculosis, tuberculosis of the glands of the neck, etc. To prevent these forms of tuberculosis, tuberculous milk and meat must not be used for human consumption. It is hoped that the Tuberculosis Order of 1913, which provides for the slaughter of tuberculous cows, and compensation for the owners, will effectually check the supply of tuberculous milk. Other preventive and curative measures which are required are the provision of open-air schools, open-air classes, and similar organisations for delicate children. The Sanatorium Benefit clauses of the National Insurance Act refer to all forms of tuberculosis, and not to phthisis only.

ALCOHOLISM AND CIRRHOSIS OF THE LIVER.

During 1912, one death was certified to be due to alcoholism, and 11 to cirrhosis of the liver. Three fatal cases of pneumonia were associated with Delirium Tremens.

CANCER.

The number of deaths from cancer was 76, or 1.06 per 1,000 of the population. The rate in 1911 was 1.04, and in 1910, .76. Cancer of portions of the alimentary canal caused 53 of these deaths, including 16 each from primary cancer of the stomach and intestine respectively. Cancer of the uterus caused 8, and of the breast 5 deaths.

Pneumonia caused 133 deaths, or 1.86 per 1,000. The corresponding rate in 1911 was 2.15.

Bronchitis was responsible for 95 deaths, or 1.33 per 1,000, compared with 1.56 in the preceding year.

Inquests.—75 inquests on residents were held during the year. Burning accidents were responsible for 15 deaths; accidental drowning caused 9; accidents associated with dock labourers' work 10; and other accidents 9. Six deaths were due to suicide, and one to murder. In the remaining cases, death was certified to be due to natural causes, which was in some cases associated with, or accelerated by, an accident.

Burns and Scalds.—During the year there was a still further increase in the number of deaths due to burns and scalds.

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	Total.
Deaths, from burns and scalds, of children under the age of 8 years ...	6	..	5 ...	7 ...	3 ...	14 ...	6 ...	9 ...	1 ...	7 ...	10 ... 68

One hundred fireguards have been given away by the Bootle Health Society during the past year.

Other Diseases.—Of the 258 deaths certified to be due to "other defined diseases," 46 were caused by cerebral hemorrhage, 25 by arterio-sclerosis, and 41 by senile decay. Uncertified deaths reached the large number of 41, which is 3.5% of the total.

THE MIDWIVES ACT, 1902.

The number of midwives on the local roll is 23; this is 3 more than during 1911. Fourteen others, who reside outside the district gave notice of their intention to practise within the Borough. Two local midwives have not passed any qualifying examination, but each has been recognised by the Central Midwives' Board in consequence of having been in practice as a midwife for at least a year on July 31st, 1902.

In compliance with Section 8 of the Act, the Central Midwives' Board have been supplied with the following information:—

Change of name.....	Nil
Change of address	4
Notice of intention to cease practice	Nil
Death of Midwife	1

The following numbers of notifications have been received:—	1912.	1911.
Records of sending for medical help	120	92
Still births	41	46
Death of child before attendance of a medical practitioner	1	1
Number of births attended by the midwives who reside in Bootle	1,377	1,296
Number of births attended by midwives who reside outside the district... ..	287	287
Total number of births attended by midwives	<u>1,664</u>	<u>1,683</u>

Midwives attended 79·5 % of the births registered in the Borough compared with 80 % in 1911 and 82 % in 1910.

Largest number of births attended by one midwife... ..	246	206
Percentage of still births to total births attended by midwives	2·4	2·7

The following particulars relate to the period of pregnancy at which the still births took place :—

				1912.		1911
At 5 months	...	...	...	1	...	1
„ 6	„	...	...	3	...	6
„ 7	„	...	...	9	...	8
„ 8	„	...	...	11	...	7
„ 9	„	...	...	17	...	24
				—		—
			Total	41		46

The 120 cases in which medical help was obtained are 7·2% of the total number of births attended by midwives. The corresponding figure in 1911 was 5·4.

The following is a list of the complications for which medical assistance was required :—

Labour—

Unusual presentations	14
Post-partum hæmorrhage	6
Retained placenta	9
Adherent placenta	3
Obstructed labour, uterine inertia, or “ requiring instrumental assistance ”	53
Ruptured perinæum	10
Other complications	6

Puerperium—

Rise of temperature above 100·4° F.	10
--	----

Newly-born child—

Dangerous feebleness and prematurity	7
Inflammation of eyes or eyelids	2

120

Seventeen confinements were attended by uncertified women. There are four of these so-called “handy-women” in the town. One attended 9 births, another 6, and the others 1 each. Owing to the fact that proceedings ought not to be taken unless it can be *proved* that these women carry on this business “habitually and for gain,” it has

not been possible to take legal action. In 11 of the 17 cases, no midwife had been engaged. The explanation usually given in these circumstances is that the "handy-woman" was called upon unexpectedly "as a neighbour," or because she "happened to be passing." In the other 6, it was stated that a midwife had been engaged, but for various reasons had refused or been unable to attend. In these cases also, the neighbourly assistance from the handy-woman was forthcoming. Though it is very probable that in certain of these cases the unqualified midwife had been engaged to attend, it was impossible to prove it, or to show that she had subsequently received any fee for her services.

PUERPERAL FEVER.

During the year, 2 cases of puerperal fever were notified. This gives a notification-rate of 0·03 per 1,000 of the census population. The corresponding rate for England and Wales was 0·06. Both patients were removed to hospitals of the West Derby Board of Guardians, and recovered. Four deaths occurred from "accidents and diseases of pregnancy." These represent approximately 1 death for each 500 births.

OPHTHALMIA OF THE NEW-BORN.

Eight cases of this disease were notified by midwives to the Health Department during the year; in two, the notifications were sent in as "records of sending for medical help"; in the other 6, special postcards supplied by the Health Department were used. Three of the cases were treated by private practitioners; one was admitted with the mother to St. Paul's Eye Hospital, Liverpool; one was treated as an out-patient at the same hospital; and two as out-patients at the Bootle Borough Hospital. One case, which was very slight, recovered without medical attention. Two whilst under treatment for ophthalmia died of other diseases, five completely recovered, and one lost the sight of one eye.

This disease is responsible for a very large proportion of the cases who now seek admission to Blind Schools, and as, if proper treatment is secured at an early stage, blindness can be prevented, every effort must be made to provide the necessary treatment for those who unfortunately suffer from it. The Lady Inspectors visit all cases of which they are cognisant, and assist in carrying out the necessary treatment. The

constant removal of the discharges from the eyes and the frequent application of lotions which are required in the severe cases, cannot well be performed outside an institution, and the St. Paul's Hospital, Liverpool, to which such infants and their mothers are admitted, has a special ward for these cases.

Many Local Authorities require the compulsory notification of this disease, as was recommended by the Departmental Committee on the Midwives' Act. Most of these cases, and possibly all, are now notified by midwives, but, if compulsory notification, would lead to a single child being saved from blindness, the Notification Act should be extended so as to include Ophthalmia Neonatorum.

HOUSING.

A considerable portion of last year's report was devoted to the subject of housing, hence it is not necessary now to deal with it at such great length. At the census of 1911, there were 12,402 inhabited, and 1,011 uninhabited houses in the Borough. The average number of persons occupying each inhabited house was 5.6, compared with 5.8 at the census of 1901. The number of houses built since the 1911 census is 63. The following table shows the number of houses erected during 1912 and the preceding 10 years in each of the wards:—

Year.	Derby.	Stanley.	Mersey.	Knowsley.	Linacre.	Orrell.	Whole Borough.
April 1902—April 1903 ...	126	28	—	—	85	—	239
„ 1903— „ 1904 ...	91	28	—	30	132	—	281
„ 1904— „ 1905 ...	135	76	—	1	143	—	355
„ 1905— „ 1906 ...	278	52	—	—	214	—	544
„ 1906— „ 1907 ...	190	25	—	—	110	*26	351
„ 1907— „ 1908 ...	73	64	1	—	51	11	200
„ 1908—Jan. 1909 ...	46	52	—	—	14	21	133
„ 1909— „ 1910 ...	44	44	—	1	10	1	100
„ 1910— „ 1911 ...	7	15	—	—	6	11	39
„ 1911— „ 1912 ...	19	—	—	—	1	—	20
„ 1912— „ 1913 ...	17	1	—	—	19	8	45
	1,026	385	1	32	785	78	2,307

* Included in the Borough in 1906.

In November 1906, there were 810 houses in Orrell.

Beresford Street.—Closing orders were made during 1911 in respect of 9 occupied lower, and 34 unoccupied upper, tenements in this street. Notices to repair were issued in respect of 35 other houses; in the cases of 4 only, belonging to a separate owner, were these notices complied with. Notices calling upon the tenants to cease to inhabit the houses were served upon the occupiers of the 5 lower tenements, which were still inhabited, in March, 1912. With these exceptions, no tenants left the street under notice from the Local Authority. In May, 1912, it became necessary to make closing orders concerning a further 46 of the unoccupied houses, which had been inspected during 1911; included in this 46 were 21 upper tenements, concerning which notices to repair had been served in 1911: the owner, instead of complying with the notices then issued, ejected the tenants, and allowed the property to become even more dilapidated and, finally, ruinous, so that eventually closing orders had to be issued for practically every house in the street, except the above-mentioned 4, which were repaired in 1911. Steps were being taken to secure the demolition of 89 of the tenements in accordance with the procedure of the Housing Acts, when the owner gave an undertaking to demolish all the houses. The whole of the north side, including the 4 houses which had been repaired, has now been demolished and the land added to a ship-repairing yard. The demolition of the south side is in progress, and only 4 empty houses now remain there. During the past few years, there has been a gradual exodus from the street which was inhabited in June, 1911, by 287 people, and in former years by over 500. Most of these persons have removed into the neighbouring streets of Mersey Ward, but some have migrated to Knowsley Ward.

Housing Accommodation.—The number of empty houses in the Derby Road District (Mersey Ward) is gradually becoming smaller. In January, 1911, 70 houses in this district were empty, including 63 "To be let" at a rental of 7s. 6d. weekly or less. In December, 1912, the total number had been reduced to 17, 14 of which were of a weekly rental of 7s. 6d. or less. The erection of a large ship-repairing works in Mersey Ward will probably cause an influx of people into the town. The fact that there were 1,011 uninhabited houses in April, 1911, shows that, taking the town as a whole, there is quite sufficient house accommodation. The respectable artisan who can afford to pay a rent of 7s. 6d. or 8s. 6d. a week is amply provided for, but there is a deficiency of small self-contained houses at very low rentals. It is

because of this that there is such a large amount of sub-letting in the poorer districts. An inquiry in December, 1911, showed that there were 415 sub-let houses in Mersey Ward. In June, 1912, the 748 houses of the Bootle Hall and Webster Estate District were inspected. Of these 48 (6.1%) were empty, 623 (83.2%) were occupied by one family; 68 of these took in lodgers; 75 (10%) were occupied by two families each, and 2 by three families each. Sub-letting is largely confined to 3 or 4 streets, in which the houses have 3, or more, sleeping apartments. In many streets, for example, Bala, Bangor, Conway Denbigh, Flint, Holywell, Rhyl, and Stafford Street, practically all the houses were occupied by one family each. It is probable that there are about 600 sub-let houses in the town. During the year 1,155 visits were paid to sub-let houses by the Lady Inspectors. Owing to the increasing demands of other work upon the time of the inspectors and the migratory habits of the tenants, only 115 addresses are now upon the sub-let house register; 79 of these were added during 1912. It often happens that other tenants are in occupation before the formalities of registration are completed; then the whole process has to be started again. The total number of day and night inspections made by the male inspectors to the registered houses was 724. Forty-four were found to be overcrowded; with one exception the overcrowding was remedied as the result of a notice received from the Health Department. In the other case, in which 18 persons lived in a five-roomed house, the case was taken into court, and a fine imposed. There are four common lodging-houses in the town, which are registered to accommodate 249 lodgers. During the year, they were never quite full. It was necessary to issue a summons in respect of one lodging-house because of lack of cleanliness in it and neglect to perform the required periodical limewashing. The Council in July, 1912, after careful consideration, negatived a proposal to erect a block of artisans' dwellings on the vacant land in Mersey Ward known as Falkner Crescent.

With a single exception, there are no back-to-back houses in the Borough. In one small district the arrangement of the streets is bad; otherwise the amount of open space about the houses is satisfactory. All new buildings are erected under the supervision of the Borough Engineer.

STATEMENT OF WORK DONE DURING 1912, UNDER HOUSING
(INSPECTION OF DISTRICT) REGULATIONS, 1910.

Number of Houses Inspected.	Number of houses considered to be in a state so dangerous and injurious to health as to be unfit for human habitation.	Number of representations made to the local authority with a view to the making of closing orders.	Number of closing orders made.	Number of houses (respecting which closing orders had been made) which were demolished without orders for demolition being made.	Number of houses which, after the making of closing orders, were put into a fit state for human habitation.	Number of houses in which defects were remedied without the making of closing orders.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
299	46 Unoccupied.	46	46	*85	—	211

Number of houses declared not reasonably fit for human habitation (Sec. 15 Housing, &c. Act, 1909.)	Number of houses repaired after notices under Sec. 15 of Housing, etc. Act, 1909.	Number of Notices under Sec. 15 not yet complied with.	Number of houses ordered to be repaired otherwise than under Sec. 15 of the Housing, etc. Act, 1909.	Number of houses dealt with in column 11 which were repaired.	Number of houses dealt with in column 11 and not yet repaired.	Number of houses in which no repairs were required.
(8)	(9)	(10)	(11)	(12)	(13)	(14)
54	25	29	228	186	42	17

* These include the 43 houses in respect of which closing orders were made during 1911.

Another 4 houses are in process of demolition.

As will be seen from the foregoing table, 299 premises were inspected in accordance with the provisions of the Housing Regulations. They included 287 occupied, and 12 unoccupied houses. During 1911, 133 houses were inspected. Further proceedings relating to 46 houses in Beresford Street, which were inspected during 1911, were taken in 1912, hence the total number concerning which action was taken during the year was 345. Closing orders were issued concerning the 46 houses in Beresford Street, and they are all now in process of demolition, as are also the houses with respect to which the 43 closing orders were issued in 1911, and the 10 which had not been repaired in accordance with the requirements of the Local Authority, and in respect of which closing orders were not made.

The town has now been divided into two districts, and the houses in each district are being inspected systematically, but at the present rate of progression, it will be many years before all the houses have been examined and the necessary records made. The demolition of the houses in Beresford Street has witnessed the disappearance of the property which was by far the worst in the Borough. Houses in the following streets were dealt with during 1912, viz.:—Aber Street, Bala Street, Conway Street, Denbigh Street, Lincoln Street, Lees Terrace, Sheridan Place, Mann Street, Emley Street, Camden Street and Bangor Street. In 17 houses no defects were discovered; the remaining 282, with a few exceptions, were in fair condition. The defects commonly found were the following:—

Defective sash cords,

- „ window frames,
- „ W.C. putty joints,
- „ W.C. and ashpit walls,
- „ yard surfaces,
- „ house roofs, and

Missing baluster rails.

In view of the above, it was thought unnecessary to issue a formal notice under Sec. 15 of Housing, Town Planning, etc., Act, for each house in which defects were found, and throughout the greater part of the year the simpler expedient was adopted of sending a letter to the owner, informing him of the defects found, and requesting him to repair them. In every case property owners have performed the necessary work, or are proceeding to do so, and in no case since the new procedure was adopted has it been necessary to send a formal notice with a view to bringing pressure to bear upon the owner.

During the first few months of the year, before the above-mentioned scheme was brought into operation, 54 notices under Sec. 15 of the Act were issued; by the end of the year 25 of these had been complied with. In seven houses the requirements included the provision of a cupboard for the storage of food for the use of the sub-tenants of a sublet house.

In 29 houses, all in one street, the work was not completed at the end of the year, but at the time of writing, very little remained to be done; in the case of this particular street, the Committee, in view of special circumstances, allowed the owners to proceed very gradually with the work of repair.

Since the commencement of the scheme, by which letters were sent to the owners instead of formal notices, 228 houses have been dealt with; in 186 the work has already been completed, and in the remaining 42 reported upon towards the close of the year, the work is now in progress.

Thus, during the year, 211 houses have been placed in a good state of repair—a very considerable number. It is hoped that the tenants will realise their duty to the landlords, and take greater care of the houses rented to them than has in many instances been the case in the past.

FOOD INSPECTION.

Meat and Fish.—The butchers' and fish shops throughout the town were regularly visited during the year. The articles there exposed for sale were wholesome. During the year 392 lbs. of unsound food were destroyed in small quantities at a time; most of it was destroyed at the request of the owners. No tuberculous meat was discovered in the Borough.

Only two slaughter houses are in use. The license for one of these was given on condition that no animals, except those belonging to the licensee, should be slaughtered there, unless information as to the time of slaughtering had been previously supplied to the Medical Officer of Health. Nearly all the meat sold in Bootle comes from the Liverpool or Birkenhead Public Slaughter Houses, or is imported in a frozen condition from abroad.

Since July, owing to the outbreak of foot and mouth disease, very little slaughtering has been done in the Borough.

A food factory certified for the preparation of food for export to the Argentine Republic, the United States of America and the Philippine Islands is kept under observation. In January, 1913, the requirement which made it necessary to issue certificates relating to meat exported to the Argentine Republic was withdrawn.

Fruit and Vegetables.—Greengrocers' shops and hawkers' carts were frequently inspected throughout the year, especially during the summer. One person was fined 40s. and costs for having for sale in his shop 36lbs. of unsound fruit and vegetables. No unsound fruit was found in any of the hawkers' carts, though inspections were made at all hours during the day and late at night.

Milk.—About 526 dairy cows are kept in the 32 shippons in the Borough. The inspectors paid 786 visits to the shippons and dairies, and 901 to the 32 registered milk shops. The cows are periodically examined by a veterinary surgeon, Mr. James Sumner, M.R.C.V.S., who has made the following report on the work done by him during the year 1912:—

“Upon making the usual quarterly inspections of the cows in the shippons of the Borough, I found not only the udders, but the cows themselves, in a very satisfactory condition, the good quality being maintained all round. The utensils for collection and distribution were all in a satisfactory state, and the cows cleaner than they used to be, though there is still room for improvement in some shippons. There was a slight decrease in the number of cows, owing, no doubt, to the restrictions imposed during the late outbreak of foot and mouth disease, which stopped all importation from Ireland, and also to the great rise in the price of feeding materials, which was due to the bad weather. These caused a great increase in the cost of production of stall-fed cows' milk, and many of the dairymen were obliged to import milk from outside farms. No cows were tested with tuberculin, but about 10, whose udders were not in a satisfactory condition, were sent out. Six samples of milk from suspected cows were examined microscopically for acid-fast bacilli, but none were found. I have found the dairymen most anxious to have only healthy cows in

their shippous, and when an unsatisfactory condition of an udder has been discovered and demonstrated to them, they have had the animal taken out."

Nothing is definitely known as to what became of the animals which were sent out of the town by the order of the Veterinary Inspector.

The issue of the long-expected Tuberculosis Order, which comes into operation in May, 1913, will greatly strengthen the hands of Local Authorities in their efforts to deal with tuberculosis. The fact that bovine tuberculosis is not infrequently the cause of human tuberculosis, especially in children, is now established beyond all doubt, and the sale of tuberculous milk must be stopped before any serious attempt can be made to grapple with the problem of non-pulmonary tuberculosis. The new order provides for the notification, under penalty, of any cow which has a chronic disease of the udder, or which appears to be suffering from tuberculosis with emaciation. The animal is then to be examined by the Veterinary Inspector of the Local Authority: and if it is decided that the animal is tuberculous, it is, after valuation, to be slaughtered, and compensation paid to the owner on the following scale:—

1. If postmortem examination does not show that the animal was suffering from tuberculosis, "The Local Authority shall.....pay to the owner thereof a sum equal to the value of the animal as agreed, and a further sum of 20/-."
2. "If the animal was suffering from tuberculosis (not being advanced tuberculosis) the Local Authority shall.....pay.....a sum equal to three-fourths of the animal as agreed."
3. "If.....the animal was suffering from advanced tuberculosis, the Local Authority shall.....pay.....a sum equal to one-fourth of the animal as agreed, or the sum of 30/- whichever sum is the greater." "Advanced tuberculosis" is defined as follows:—

(a) When there is miliary tuberculosis of both lungs.

(b) When tuberculous lesions are present on the pleura and peritoneum.

(c) When tuberculous lesions are present in the muscular system or in the lymphatic glands embedded in or between the muscles, or

(d) When the carcase is emaciated and tuberculous lesions are present.

The above is the degree of tuberculosis which in the opinion of the Royal Commissioners justifies the seizure by meat inspectors of the entire carcase and all the organs thereof.

In other cases of tuberculosis, the carcase if otherwise healthy need not, in the opinion of the Commissioners, be condemned under the Public Health Acts, except the portions containing tuberculous lesions. One-half the net sum required for compensation during the first five years of the working of the Order will be provided by His Majesty's Treasury.

The third Interim Report of the last Royal Commission on Tuberculosis contains the following information: "We have found that even in the case of cows with slight tuberculous lesions, tubercle bacilli in small numbers are discharged in the fæces, while as regards cows clinically tuberculous our experiments show that the fæces contain large numbers of living and virulent tubercle bacilli." These facts are additional reasons why it is essential that scrupulous cleanliness in the shippon must be insisted upon, and every effort is being made by frequent visitation to secure in all shippons that attention to cleanliness which is now found in most.

The bacteriological examination of railway milk shows that the milk which comes into the Borough is certainly not as clean as it ought to be, for, during the year, out of nine samples examined bacteriologically, all, with a single exception, contained the *Bacillus Coli Communis*, which indicates filth contamination or inflammation of the udder, in numbers varying from 50 to 310 per cubic centimetre. The *Bacillus Enteritidis Sporogenes* (Klein) was absent in all. None of the samples were tuberculous, as was shown by the guinea pig test.

BACTERIOLOGICAL EXAMINATIONS.

Three meat pies, two samples of sausages, and one of brawn, several mussels, a tin of sardines, and one of herrings and tomato sauce were

examined bacteriologically. The *Bacillus Coli Communis* was found in one of the meat pies, in both samples of sausages, in the mussels, and in the brawn. The other samples were sterile.

No serious attack of food poisoning came to the notice of the Medical Officer of Health during the year.

SALE OF FOOD AND DRUGS ACTS.

The Public Analyst is Mr. W. H. Roberts, M. Sc., F.I.C. The table shows the number of samples taken and the number reported to be adulterated.

SALE OF FOOD AND DRUGS ACTS, YEAR 1912.

	Total Number of Samples Analysed	Number Reported to be Adul- terated or not up to Standard.	Number of Prosecu- tions.	Number of Convic- tions.	Remarks.
Milk	102	25	10	10	The remaining 15 were cases of deficiency in cream, where the deficiency was so small as not to warrant prosecution.
Butter	45	3	1	1	Two of these were informal samples.
Cheese	10	1	—	—	—
Pepper	9	—	—	—	—
Drugs	8	1	—	—	—
Lard	8	—	—	—	—
Jam	3	—	—	—	—
Beer	3	—	—	—	—
Whiskey	2	—	—	—	—
Cream	2	1	—	—	—
Rum	1	—	—	—	—
Margarine	1	—	—	—	—
Tinned Tomatoes	1	—	—	—	—
Tinned Pineapple	1	—	—	—	—
Rice	1	—	—	—	—
Syrup	1	—	—	—	—
Treacle	1	—	—	—	—
Custard Powder	1	—	—	—	—
Vinegar	1	—	—	—	—
Potted Shrimps	1	1	—	—	+
Totals	202	32	11	11	—

The percentage of samples reported against was 15·8, and in 5·4% the vendors were prosecuted. All the samples of milk were taken in accordance with the procedure prescribed by the Acts, but 96 of the other samples were taken informally. This is necessary because the amount required for analysis, after subdivision of the sample into three parts, is often larger than that usually purchased by the ordinary customer of a small shop. Small quantities purchased by an agent are sent for analysis, and thus a knowledge is obtained of any adulteration which is being practised.

The results of the analyses of informal samples are telephoned by the Public Analyst as soon as they are available, and a formal sample is immediately purchased if the informal one was adulterated. 24·5% of the samples of milk were not up to the standard prescribed by the regulations of the Board of Agriculture. These include 9·8% in which the deviation from the standard was marked. The corresponding percentages in 1911 were 34·6 and 21·7. Throughout England and Wales in 1911, the latest year for which the statistics are available, the percentage of samples of milk found adulterated or not up to standard was 11·9, which is very much lower than the Bootle figure of 34·6.

In the 15 cases of minor deficiencies of cream, the vendors were warned and advised to have their milk privately analysed at regular intervals, in order that the influence of change of food, hours of milking, &c., might be determined, and unsatisfactory cows disposed of. This will be done at the County Farm, Hutton, near Preston, for a fee of 6d. per sample.

The two worst cases of milk adulteration were the additions of 14 and 8% of water respectively. In each of two other cases the analyst's certificate stated that the milk had been deprived of 18% of its cream. The amount of the fines and costs in the 10 cases taken into court was £14 11s. 6d. The analyst's fee was allowed in every case except one. Twenty samples of railway milk were taken, and 17 of these were reported to be genuine; in the remaining three, there were small deficiencies in the amount of cream. Three samples of butter were reported against. One was informally purchased and contained 0·64% of borates: a formal sample subsequently purchased from the same vendor contained 0·72%. The vendor was ordered to pay the costs of the prosecution, viz., one guinea. The third was an informal one, and consisted of margarine. Two formal samples were subsequently purchased, but both were genuine. One sample of cheese was reported to have been prepared from partially skimmed milk.

The drug which was reported against was Spirit of Nitrous Ether, which contained a deficiency of ethyl nitrite. The vendors of both these articles were informed that samples purchased from them were not up to the standard, as also the vendor of a pot of shrimps, which contained an excessive amount of borates.

PUBLIC HEALTH (MILK AND CREAM) REGULATIONS, 1912.

These Regulations came into operation on October 1st, 1912, and prohibited the addition of—(1) any preservative to milk intended for sale for human consumption ; (2) any thickening substance to cream ; (3) any preservative substance to cream containing less than 35% by weight of milk fat ; (4) any preservative other than—(a) boric acid, borax, or a mixture of these, or (b) hydrogen peroxide, to cream containing more than 35% by weight of milk fat. The regulations also state that any cream containing a preservative must have the fact clearly shown upon a label printed with letters of a certain specified size attached to the receptacle containing the cream. In the case of boric preservatives, the amount present has also to be stated.

All samples of milk taken during the year were examined for preservatives with negative results. Two samples of cream were purchased in November. One contained 0·26% of boric acid, and was not properly labelled. The other contained 0·4% and was labelled. In the former case the vendor promised to use the required labels in the future.

WATER ANALYSES.

TABLE SHEWING MONTHLY ANALYSES OF WATER SUPPLIED BY THE LIVERPOOL WATER COMMITTEE TO BOOTLE DURING THE YEAR 1912.

Description.	Month.	Total Solid Matter in Solution	Ammonia.	Ammonia from Organic Matter by distillation with Alkaline Permanganate.	Nitrogen as Nitrates	Combined Chlorine	Oxygen required to oxidise		Total Hardness.
							In 15 mins	In 3 hrs	
Vyrnwy	Jan.	4.08	.002	.005	none	.85	.074	.141	1.69
Rivington	"	10.36	.002	.004	trace	1.50	.009	.027	4.57
Green Lane Well	"	34.80	none	none	.590	3.40	none	none	22.29
Vyrnwy	Feb.	4.30	.001	.003	none	.80	.082	.157	1.69
Rivington	"	9.80	.006	.003	trace	1.40	.023	.046	4.57
Vyrnwy	Mar.	4.84	.001	.003	none	.80	.098	.145	1.82
Rivington	"	9.64	.002	.004	trace	1.40	.027	.053	4.57
Vyrnwy	April	4.00	.001	.003	none	.80	.092	.145	1.63
Rivington	"	9.88	.002	.006	trace	1.40	.022	.036	4.57
Green Lane Well	"	34.76	none	none	.628	3.50	none	none	22.29
Vyrnwy	May	3.60	.001	.005	none	.80	.080	.128	1.56
Rivington	"	9.86	.002	.002	trace	1.45	.011	.017	4.29
Green Lane Well	"	34.68	none	none	.598	2.45	none	.003	22.29
Vyrnwy	June	3.60	.001	.004	none	.85	.052	.113	1.56
Rivington	"	8.40	.001	.002	none	1.30	.005	.010	4.03
Green Lane Well	"	34.68	none	none	.536	3.45	none	none	22.29
Vyrnwy	July	3.40	.003	.007	none	.80	.102	.156	1.56
Rivington	"	9.40	.002	.003	none	1.45	.004	.010	4.57
Green Lane Well	"	34.80	none	none	.598	3.50	none	.004	22.29
Vyrnwy	Aug.	4.48	.006	.007	none	.80	.143	.241	2.08
Rivington	"	8.24	.004	.005	none	1.40	.023	.040	4.29
Green Lane Well	"	34.20	.001	none	.598	3.40	none	.002	22.29
Vyrnwy	Sept.	3.76	.002	.006	none	.80	.179	.269	1.69
Rivington	"	8.64	.001	.002	none	1.25	.014	.027	4.57
Green Lane Well	"	34.40	.001	.001	.568	3.40	none	.004	22.29
Vyrnwy	Oct.	3.72	.002	.006	none	.75	.153	.268	1.69
Rivington	"	8.08	.001	.004	none	1.15	.017	.033	3.90
Green Lane Well	"	34.32	none	none	.580	3.35	.003	.008	22.29
Vyrnwy	Nov.	3.96	.002	.005	none	.70	.113	.231	1.45
Rivington	"	7.76	.003	.004	none	1.15	.020	.035	3.90
Green Lane Well	"	34.08	.001	none	.550	3.30	none	.003	22.29
Vyrnwy	Dec.	4.24	.001	.003	none	.70	.116	.232	1.95
Rivington	"	7.92	.002	.003	none	1.15	.025	.050	3.90
Green Lane Well	"	33.84	none	none	.490	3.30	none	.006	22.29

The water supply is "constant" and the above analyses show it to be of excellent quality; a little "Green Lane Well" water mixed with that from the other sources is supplied to the upper parts of the Borough; most of the town is supplied with Rivington or Vyrnwy water or a mixture of these.

The following information required by the Local Government Board, has been supplied by the Borough Engineer:—

DRAINAGE AND SEWERAGE.

“The sewerage system is entirely by gravitation discharging direct into the River Mersey. The Borough is divided into four drainage districts with four separate outfalls into the river. One of these outfalls is used solely for Bootle, and one in addition conveys the sewerage from Walton Gaol, situated within the City of Liverpool, one is used jointly with Liverpool, and the fourth also drains a portion of Seaforth and the greater portion of the drainage from Litherland, both Urban Districts.

Speaking generally, the sewers within the Borough are, so far as is known, sufficient for the needs of the Borough.

The sewers have good falls, and with the exception of some passage sewers, are self-cleansing; to these sewers Automatic Flushing Tanks, supplied with salt water, are fixed at all heads, for assisting the cleansing of same.

Since October, 1903, all new house drains have been subjected to a water test before finally being approved.

SCAVENGING.

The following is the number of Ashbins and Ashpits in the Borough:—

		1912.		1911.
Ashbins	... ..	4,466	...	4,307
Ashpits, single	...	1,548	...	1,580
Ashpits, double	...	4,373	...	4,420
Pail Closets	...	Nil	...	Nil.
Middens, single	...	21	...	21
Middens, double	...	2	...	2

The ashbins are emptied once every week; the ashpits and middens at least once every month, but in certain districts during the summer, they are emptied three times a month. The method adopted is to empty the contents of the ashpits or ashbins into light baskets, which are wheeled along the passages, and emptied directly into covered carts. The house refuse collected during the year ending March 31st, 1913, amounted to 16,655 tons,

of which 16,099 tons were destroyed at the Destructor, and 556 tons were sent along the canal to farmers outside the district and used for filling up pits. 5,343 tons of street sweepings were collected and disposed of to farmers outside the Borough and 1,530 tons to farmers and allotment owners within the Borough."

ASHPITS.

When an ashpit is found in bad condition, the owner often prefers to abolish it, and provide an ashbin rather than repair it. During the year 45 ashbins were provided in this manner. Many ashpits which are in fair condition are situated within a few feet of a living room. These ashpits were substituted for privies many years ago, the Corporation in most cases paying one-half the cost. In accordance with newer views on Sanitary Science it is now known that ashbins are much more conducive to the health of the community than ashpits because the latter are more liable to act as breeding places for disease-carrying flies. A proposal has recently been made to abolish the ashpits and provide ashbins in a wholesale manner in certain districts where the ashpits are within a few feet of living rooms, the yards are small and the back passages narrow: the Corporation would defray approximately one-half the cost of the conversions.

CLOSET ACCOMMODATION.

Practically every house in the town is provided with one or more water-closets.

OFFENSIVE TRADES.

The following offensive trades exist in the town :

Tanneries—2.

Fat Melter—1.

No nuisance was caused during the year.

The keeping of a fried-fish shop is not a statutory offensive trade in Bootle, though bye-laws to regulate this business have been made in certain towns. All the shops were visited however, and the businesses were carried on, with very few exceptions, in a satisfactory manner.

RAG FLOCK ACT, 1911.

This Act came into operation on July 1st, 1912, and provides that no person shall have in his possession for sale or to use for the purpose of making any article of upholstery, cushions or bedding, flock manufactured from rags, unless it conforms to the prescribed standard of cleanliness. There are three upholsterer's shops in the town ; no rag flock has been used there since the Act came into operation.

DISEASES OF ANIMALS ACTS.

Ships which have carried cattle to this country are inspected and the necessary cleansing supervised.

Parasitic Mange Order.—During the year 26 cases of parasitic mange were reported ; 123 visits were paid to the stables in which the cases occurred.

Anthrax.—Four suspected cases in animals occurred, but in none was the diagnosis confirmed bacteriologically.

LOCAL OR ADOPTIVE ACTS RELATING TO PUBLIC HEALTH IN FORCE IN THE BOROUGH ARE :—

Bootle Corporation Act, 1890.

Bootle Order, 1897, relating to Sanitary Improvements.

Bootle Corporation Act, 1899.

Infectious Disease (Notification) Act, 1889.

Infectious Disease (Prevention) Act, 1890, Sections 4, 5, 6, 14, 15, 16, 17, 18, 20, and 21.

Public Health Acts (Amendment) Act, 1890, Part III.

Notification of Births Act, 1907.

Section 95 of the Public Health Acts (Amendment) Act, 1907. It is very desirable that the additional powers given to Sanitary Authorities by this Act should be obtained by adopting other Sections.

INFECTIOUS DISEASES HOSPITALS.

The question of the extension of the hospital was further considered during the year.

The Linacre Hospital for Infectious Diseases was built in 1886, it then consisted of an administration block, two permanent brick pavilions, and a temporary building for cases of smallpox. In 1893, during an epidemic of typhoid fever, a temporary structure for twenty patients was erected, and the following year an additional brick building, which is now used for cases of scarlet fever. During 1900-2, a porter's lodge, discharge block and additions to the administrative block were built, and in 1903 two additional temporary wards were added to the smallpox pavilion. There are now 120 beds in the hospital, of which 34 are in the smallpox pavilion ; the remaining 86 beds are in five large and two small wards ; they provide accommodation for cases of scarlet fever, diphtheria, typhoid fever and typhus fever. The accommodation for "mixed " or "complicated" cases, and for cases of "other diseases" is not adequate. In 1909, a site for a smallpox hospital at Maghull, some six miles away, was bought, and during 1910 the drains and foundations were laid so that temporary buildings could be erected thereon in the course of eight or ten days.

In July, 1912, the Council resolved that future cases of smallpox should be treated at Maghull, and that buildings should be erected there for their reception. It was also decided to build an observation ward for 4 patients at Linacre Hospital, to enlarge the administration block, and to adapt the newer smallpox pavilions for the accommodation of cases of phthisis. The Local Government Board have held a local enquiry on this subject, and have sanctioned the necessary loan. During the last few months of the year, male cases of phthisis were admitted to the pavilion formerly used for cases of typhoid fever, and which was adapted for "open-air" treatment. Arrangements were made to treat cases of typhoid fever in another portion of the hospital. Insured persons suffering from phthisis were admitted and the Insurance Committee paid 25/- weekly per patient for their treatment ; observation, intermediate and advanced cases can be admitted. The benefits due to the education of the intermediate, and the isolation of the advanced cases are very great. Tuberculin has been administered to suitable cases, and provision has been made for graduated work under supervision in the grounds for those who are likely to benefit by it.

Cases Treated in the Infectious Diseases Hospital, Linacre, during the year 1912.

Patients in hospital on January 1st, 1912.

	Scarlet Fever	Diphtheria	Enteric Fever	Small-pox.	Totals.
Bootle	32	3	1	—	36
Litherland	3	1	—	1	5
Formby	—	—	—	—	—
Totals...	35	4	1	1	41

All recovered.

SCARLET FEVER : CASES ADMITTED.

Ages	Bootle		Litherland		Formby		Totals	Deaths
	Males	Females	Males	Females	Males	Females		
Under 1 year	—	—	1	—	—	—	1	—
1—2 years	—	2	—	—	—	—	2	—
2—3 „	4	6	1	—	1	—	12	2
3—4 „	5	7	—	—	—	—	12	—
4—5 „	10	5	3	—	—	—	18	—
5—10 „	33	30	5	4	2	—	74	—
10—15 „	11	14	1	2	1	2	31	—
15—20 „	1	1	—	2	—	—	4	—
20—25 „	—	2	—	1	—	1	4	—
25—35 „	1	1	1	1	—	—	4	—
35—45 „	—	1	—	—	—	—	1	—
Totals ...	65	69	12	10	4	3	163	2
	134		22		7			

Deaths—Bootle 1 ; Formby 1.

These cases included a nurse who developed the disease.

DIPHTHERIA : CASES ADMITTED.

Ages	Bootle		Litherland		Formby		Totals	Deaths
	Males	Females	Males	Females	Males	Females		
Under 1 year	—	—	—	—	—	—	—	—
1—2 years	1	1	—	—	—	—	2	1
2—3 „	1	2	—	1	—	—	4	1
3—4 „	—	1	—	1	—	—	2	—
4—5 „	4	2	—	—	—	—	6	2
5—10 „	8	4	—	2	—	—	14	2
10—15 „	3	1	—	—	—	—	4	—
15—20 „	—	1	—	—	—	—	1	—
20—25 „	—	1	—	—	—	—	1	—
Totals ...	17	13	—	4	—	—	34	6
	30		4		—			

Deaths—Bootle 5 ; Litherland 1.

ENTERIC FEVER ; CASES ADMITTED.

Ages	Bootle		Litherland		Formby		Totals	Deaths
	Males	Females	Males	Females	Males	Females		
20—25	1	—	—	—	—	—	1	1
25—35	—	—	1	—	—	—	1	—
35—45	1	—	—	—	—	—	1	—
Totals ...	2	—	1	—	—	—	3	1
	2		1		—			

Death :—Bootle 1.

Patients in Hospital on December 31st, 1912.

	Scarlet Fever	Diphtheria	Enteric Fever	Small-pox	Phthisis	Totals
Bootle	31	—	—	—	5	36
Litherland	1	—	—	—	—	1
Formby	1	—	—	—	—	1
Totals...	33	—	—	—	5	38

During the year 1912, the number of cases admitted was 234.

„ „ „ „ „ treated „ 275.

Of the cases *treated*, the number which ended fatally was 12.
The case-mortality of those under treatment was 4·36%

Cases admitted during 1912.

	Admitted	Died	Case-mortality
Scarlet Fever	163	2	1·2 %
Diphtheria	34	6	17·6 „
Enteric Fever	3	1	33·3 „
Phthisis... ..	8	1	12·5 „
Other diseases	26	2	7·6 „
	234	12	5·12 „

Bootle cases numbered 196; Litherland 31, and Formby 7.

Deaths—Bootle 10; Litherland 1; Formby 1.

AGE AND SEX DISTRIBUTION OF “OTHER DISEASES.”

Ages.	Bootle.		Litherland.		Formby.		Totals.	Deaths.
	Males.	Females.	Males.	Females.	Males.	Females.		
2—3 years	—	1	—	1	—	—	2	—
3—4 „	—	—	—	—	—	—	—	—
4—5 „	1	1	—	1	—	—	3	1
5—10 „	1	9	—	—	—	—	10	—
10—15 „	2	—	—	—	—	—	2	—
15—20 „	1	1	—	1	—	—	3	1
20—25 „	—	2	—	1	—	—	3	—
25—35 „	—	2	—	—	—	—	2	—
35—45 „	—	1	—	—	—	—	1	—
Totals ...	5	17	—	4	—	—	26	2
	22		4		—			

Deaths :—Bootle 2.

PHTHISIS.

Eight cases, all males, from Bootle were admitted.

Ages.	No. of cases.	Deaths.
20—30	3	1
30—40	2	—
40—50	3	—
Totals ...	8	1

Cases notified under the following headings were re-classified to the number indicated :—

Scarlet Fever 12. Diphtheria 10.
Enteric Fever 4.

TRACHEOTOMY :—

Tracheotomy was performed on 1 patient for Laryngeal Diphtheria. The patient recovered.

NON-ZYMOTIC MORTALITY.

Two deaths occurred from " Other Diseases," viz., Tuberculous Meningitis 1, Broncho-pneumonia 1.

BACTERIOLOGICAL EXAMINATIONS.

In addition to the ordinary work of this kind which is required for cases of Diphtheria, Enteric Fever, and Phthisis within the hospital, the Resident Medical Officer made over 100 bacteriological examinations on behalf of the Sanitary Authority, and for private practitioners. Approximately two-thirds were for the detection of tubercle bacilli in sputum. Certain bacteriological work which cannot well be carried out at Linacre is performed at the University of Liverpool : during the greater part of the year this was done by Professor Glynn, but for the last few months by Professor Beattie. This includes the examination of rats for plague and of milk for tubercle bacilli by inoculation of guinea-pigs.

Sanitary Administration.

FACTORY AND WORKSHOP ACT, 1901.

The Medical Officer of Health is required to make and to transmit to the Secretary of State an annual summary of the work done under this Act. The following is a copy of the official table.

Additional details will be found on page 88.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

1.—INSPECTION.

Including inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
FACTORIES (including Factory Laundries) ...	128	4	—
WORKSHOPS (including Workshop Laundries)	941	25	—
WORKPLACES (other than Outworkers' Premises included in Part 3 of this Report)	572	14	—
Totals ...	1,641	43	—

2.—DEFECTS FOUND.

Particulars	No. of Defects			Number of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
Nuisances under the Public Health Acts :—				
Want of cleanliness	14	14	—	—
Want of ventilation	1	1	—	—
Overcrowding	1	1	—	—
Want of drainage of floors ...	4	4	—	—
Other nuisances	30	30	—	—
Sanitary { insufficient	2	2	—	—
Accommodation { unsuitable or defective } ...	5	5	—	—
{ not separate for sexes } ...	—	—	—	—
Offences under the Factory and Workshop Act :—				
Illegal occupation of under-ground bakehouses (S. 101) }	—	—	—	—
Breach of special sanitary requirements for bakehouses (S.S. 97 to 100) }	—	—	—	—
Other offences (Excluding offences relating to outwork which are included in Part 3 of this Report)	—	—	—	—
Totals...	57	57	—	—

3.—HOME WORK.

NATURE OF WORK—

• Wearing Apparel :

(1) Making, &c., Dungaree overalls, men's and women's under-clothing. Dressmaking, Tailoring and Boot Repairing.

(2) Cleaning and washing.

OUTWORKERS' LISTS, SECTION 107—

Lists Received from Employers—

				OUTWORKERS.			
				Lists.	Contractors.	Workmen.	
Twice in the year	...	...	22	...	2	...	40
Once in the year	...	...	—	...	—	...	—
Number of Addresses of Outworkers received from other Councils	...	...	22				
Number of Addresses of Outworkers forwarded to other Councils	...	...	18				
Notices served on Occupiers as to keeping or sending lists	...	...	—	2			

Prosecutions—

Failing to keep or permit inspection of lists	...	...	...	—
Failing to send lists	...	...	...	—
Number of Inspections of Outworkers' Premises	...	...	...	125
Outwork in Unwholesome Premises, Section 108	...	...	...	—
Instances	...	...	...	—
Notices served	...	...	...	—
Prosecutions	...	...	...	—

Outwork in Infected Premises, Sections 109 and 110—

Instances	...	...	...	...	...	...	1
Orders made (S. 110)	...	...	...	...	...	...	—
Prosecutions (SS. 109 and 110)	...	...	...	...	...	...	—

4.—REGISTERED WORKSHOPS.

Workshops on the Register (S. 131) at the end of the year.	Number.
Bakelhouses	40
Confectionery Bakelhouses	23
Workshops and Workplaces	126
Outworkers' Premises	19
Total number of workshops on Register	208

5.—OTHER MATTERS.

Class.	Number.
Matters notified to H.M. Inspector of Factories—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	3
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5). { Notified by H.M. Inspector	4
Other { Reports (of action taken) sent to H.M. Inspector.	4
Underground Bakehouses (S. 101)—	—
Certificates granted during the year (renewed)	18
In use at the end of the year	18

BAKEHOUSES.

Details of the inspection of bakehouses will be found on page 88.

The number of bakehouses now on the register is 40, and to these 618 visits were made during the past year.

In no case was it found necessary to call attention to the untidy condition of the tables and utensils, but in one the walls and ceilings were dirty. This shows considerable improvement on the results of previous years.

SHOPS ACT.

In view of the great amount of work involved in enforcing the new Shops Act, and the necessity for having a large staff available during one half-day each week, the Town Council resolved in June that the duties and powers of the Corporation under the Shops Act be transferred from the Health to the Watch Committee, and the police are now entrusted with the work of carrying out the provisions of the Act.

SUMMARY OF THE WORK DONE BY THE LADY INSPECTORS.

Total number of visits made to houses by the Lady Inspectors in respect of the matters detailed below	13,568
No. of visits made in reference to infants under one year of age ...	8,505
„ enquiries concerning deaths of infants, change of residence, etc.	1,461
„ visits and re-visits to cases of minor infectious and other diseases notified by the Elementary Education Authority	2,044

No. of references to Sanitary Inspectors	...	...	...	...	74
„ sub-let houses visited and re-visited	...	...	...	...	1,155
„ houses found dirty ...	...	...	...	...	51
„ routine visits to Midwives ...	...	...	...	...	88
„ enquiries <i>re</i> Still Births ...	...	...	...	...	65
„ other enquiries in reference to the Midwives' Act	...	...	...	...	23

SUMMARY OF WORK DONE BY THE INSPECTOR OF NUISANCES AND HIS ASSISTANTS.

NUISANCES.

No. of complaints made by inhabitants	...	...	...	...	458
„ nuisances discovered as result of the above	...	...	...	...	723
„ nuisances reported ...	...	...	...	...	4,407
„ re-inspections of nuisances	...	...	...	...	9,598
„ water-closet conversions ...	...	...	...	...	—
„ ashpits demolished and replaced by ashbins	...	...	...	...	45
„ defective ashbins renewed ...	...	...	...	...	89
No. of informations laid ...	...	...	...	...	9
„ convictions ...	...	...	...	...	7
Number withdrawn on payment of costs owing to abatement of nuisance ...	...	...	...	...	2
No. of Magistrates' Orders obtained	...	...	...	...	6
Amount of Fines and Costs	...	...	...	...	£3 8s. 0d.

COMMUNICATIONS SENT OUT FROM OFFICE.

No. of notices issued to owners ...	...	...	...	...	1,398
„ notices issued to occupiers...	...	...	...	...	182
„ notes to complainants ...	...	...	...	...	41
„ notes sent to comply with notices...	...	...	...	...	105
Communications to the Borough Engineer	...	...	...	...	244
„ „ Education Authorities	...	...	...	...	1,203
„ „ Public Library	...	...	...	...	265
„ „ House Surgeon, Bootle Hospital	...	...	...	...	265
„ „ Sunday Schools	...	...	...	...	149
„ „ Day Schools	...	...	...	...	738
„ „ Milk Vendors	...	...	...	...	174
Letters <i>re</i> Nuisances	...	...	...	...	51
Total					4,810

CINEMATOGRAH SHOWS.

There are six Picturedromes in the Town, they were inspected regularly.

CANAL BOATS AND CATTLE SHIPS.

No. of Canal Boats inspected in 1912 ...	...	...	...	...	190
„ Infringements :—					
re certificates ...	...	...	...	...	—
„ painting and repairing ...	...	...	...	...	7
„ provision of water cask ...	...	...	...	...	—
„ notices sent in respect of same ...	...	...	...	...	6
„ cattle ships inspected ...	...	...	...	...	29

COMMON LODGING HOUSES.

No. registered under the Public Health Act ...	...	...	...	4
No. of day and night inspections ...	...	...	...	306
„ informations laid in respect of infringements ...	...	...	...	1
„ convictions ...	...	...	...	1
Amount of Fine and Costs ...	...	...	...	£0 17s. 0d.

SUB-LET HOUSES.

No. of day and night inspections by male inspectors...	...	...	...	724
„ day inspections by female inspectors ...	...	...	...	1155
„ infringements of Bye-laws relating to sub-let houses ...	...	...	...	44
„ informations laid ...	...	...	...	1
„ convictions ...	...	...	...	1
Amount of Fine and Costs ..	...	...	...	16s. 6d.

STEPS TAKEN TO PREVENT NUISANCE FROM SMOKE.

No. of observations made ...	...	...	...	493
„ intimations sent... ..	...	...	...	30
„ notices served in respect of excessive black smoke ...	...	...	...	45
„ informations laid ...	...	...	...	4
Amount of Fines and Costs ...	...	...	...	£1 16s. 0d.

DAIRIES, COWSHEDS AND MILKSHOPS.

No. of Milkshops on register	32
„ Shippons with dairies attached	32
„ Inspections made—shippons, 786; milkshops, 901 ...	Total 1687

The occupiers of shippons and milkshops have from time to time been verbally cautioned with regard to the cleanliness of the premises, and the cows, and the proper storage of milk.

FACTORY AND WORKSHOP ACT.

WORKSHOPS AND WORKPLACES (EXCLUDING BAKEHOUSES).

No. on Register	126
No. of visits and re-visits	722
„ workrooms with dirty walls	12
„ „ „ „ ceilings	12
„ „ „ „ floors	—
„ „ „ „ lavatories	—
„ „ not properly ventilated	1
„ „ found overcrowded	1
„ defective drains and water closets	6
„ miscellaneous defects found	27
„ notices issued to occupiers	10
„ „ „ „ owners	23
„ „ complied with	38
„ references to the Factory Inspector	3

FACTORIES.

No. of visits and re-visits	118
„ with insufficient or unsuitable sanitary accommodation... ..	4
„ referred to Borough Engineer	4

BAKEHOUSES.

No. on Register	40
No. of visits and re-visits made... ..	618
„ bakehouses found dirty (walls and ceilings)	1
„ notices issued for limewashing	1
„ notices for defective walls and floors	4
„ notices to cleanse tables, utensils, &c.	—
„ references to the Factory Inspector	—

CONFECTIONERY BAKEHOUSES.

No. on Register	23
„ of visits and re-visits made	173
„ found dirty (walls and ceilings)	1
„ of notices issued for linewashing	1
„ „ notices issued for defective drainage	—
„ „ notices issued to cleanse floors, utensils, &c.	—

OUTWORKERS.

No. of Outworkers on Register	19
„ visits and re-visits made to houses of outworkers	125
„ notices served for sanitary defects at houses of outworkers	7

[All the above notices were complied with.]

Outworkers employed in Bootle for Liverpool, Birkenhead, and Litherland Firms,	{	Tailors or Tailoresses	4
		Dressmakers	10
		Boot Repairers	4
		Laundresses	1
Outworkers employed in Liverpool for Bootle Firms	{	Tailors or Tailoresses	12
		Boot Repairers	2

FOOD INSPECTION.

No. of visits to foodshops	869
Amount of food seized in small quantities and destroyed during the year	392 lbs.
No. of Inspections of hawkers' carts	183
„ „ „ slaughter houses	19
„ „ „ food factories	144
Amount of Fines and Costs	£2 8s. 0d.

POISONS AND PHARMACY ACT, 1908.

One licence was issued under this Act during 1912.

SUMMARY OF LEGAL PROCEEDINGS.

Defective drains, etc.	9
Infringements of Sale of Food and Drugs Acts	11
Smoke nuisance	4
Common lodging houses... ..	1
Sub-let houses	1
Unsound food	1
Verminous Children (Section 122 Children Act)	3

DISINFECTION : INFECTIOUS DISEASES.

No. of houses disinfected after notifiable infectious diseases ...	...	276
„ houses disinfected after phthisis ...	...	165
„ houses disinfected after measles ...	...	9
„ schools disinfected after measles ..	...	4
„ visits made to infected houses ...	...	255
„ re-visits made to infected houses ...	...	1,957
„ houses cleaned in default of or at request of owners ...	...	8
„ houses disinfected for causes other than fevers ...	...	17

All houses let at a rental of 8/3 per week or less are cleaned after infectious disease (*i.e.*, the walls stripped and the ceilings whitened) by the Corporation at their own cost.

FILTHY HOUSES.

No. of houses reported ..	...	87
„ notices sent ...	...	87
„ houses cleansed ...	...	76

LIST OF ARTICLES DISINFECTED.

	Bootle.	Litherland.	Formby.	Totals.
Mattresses ...	353	47	31	431
Beds ...	313	40	8	361
Bolsters and Pillows	1,028	101	63	1,192
Blankets ...	657	70	77	804
Quilts ...	495	41	29	565
Sheets ...	376	24	21	421
Carpets ...	149	15	23	187
Wearing Apparel ..	1,336	170	95	1,601
Miscellaneous Articles	291	30	45	366
	<hr/> 4,998	<hr/> 538	<hr/> 392	<hr/> 5,928

NOTE.—These figures do not include the ambulance bedding (one bed, one pillow and three blankets), which is disinfected after the removal of each case; 58 library books were disinfected.

The following articles were destroyed at the request of the owners, after infectious diseases :—

Wearing apparel	...	22	Blankets	...	...	...	5
Mattresses	...	10	Quilts	...	...	...	2
Beds	...	9	Miscellaneous	...	...	...	4
Bolsters and Pillows		2	Sheet	...	...	...	1

FLUSHING.

The flushing gang consists of two Corporation workmen, and one Liverpool waterman.

No. of private houses at which drains were flushed	...	...	12,476
„ passage sewers flushed	...	...	697
„ public buildings at which drains were flushed	...	...	61

The drains at the Bootle Borough Hospital were flushed 12 times during the year.

The amount of fresh water used during the year was 3,023,420 gallons.

The amount of salt water used was 41,470 „

TABLE 1.—COUNTY BOROUGH OF BOOTLE.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1912 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Un- corrected Number.	Nett.		Number.	Rate.	of Non- residents registered in the District. 8	of Residents not registered in the District. 9	UNDER ONE YEAR OF AGE		AT ALL AGES.	
			Number.	Rate.					Number.	Rate per 1,000 Nett Births	Number.	Rate
1	2	3	4	5	6	7	8	9	10	11	12	13
1907.	66,145	2,168	..	*32.7	992	14.9	39	175	268	123	1,128	17.0
1908.	67,127	2,182	..	*32.5	1,078	16.0	41	188	314	143	1,225	18.2
1909.	68,120	2,138	..	*31.3	989	14.5	26	185	253	118	1,148	16.8
1910.	69,122	2,016	..	*29.1	872	12.6	38	185	249	123	1,019	14.7
1911.	70,130	2,093	2,120	30.2	1,050	14.9	43	276	308	145	1,283	18.2
1912.	71,152	2,093	2,129	29.9	947	13.3	46	282	232	108	1,183	16.6

* These rates are based on the uncorrected numbers.

Area of District in acres, exclusive of area covered by water—1,947.

Total Population at all ages at census of 1911, 69,876; the number of inhabited houses 12,402, average number of persons per house 5.6.

The Union Workhouse is not within the District.

TABLE 2.—COUNTY BOROUGH OF BOOTLE.

CASES OF INFECTIOUS DISEASES NOTIFIED DURING THE YEAR 1912.

NOTIFIABLE DISEASES.	NUMBER OF CASES NOTIFIED.										TOTAL CASES NOTIFIED IN EACH LOCALITY.						Total cases removed to the Corporation Hospital.						
	At all Ages.	At Ages—Years.							Derby Ward.	Stanley Ward.	Mersey Ward.	Knowsley Ward.	Linacre Ward.	Orrill Ward.									
		Under 1.	1 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.															
Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera—Plague	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria (including Membranous Croup)	58	—	22	31	4	1	—	—	—	—	—	—	—	—	—	18	21	9	2	5	3	—	38
Erysipelas	33	1	—	2	3	17	7	3	—	—	—	—	—	—	—	6	7	4	8	6	2	—	—
Scarlet Fever	189	1	51	118	9	10	—	—	—	—	—	—	—	—	—	45	42	19	22	49	12	—	146
Typhus Fever...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever	11	—	—	2	5	3	1	—	—	—	—	—	—	—	—	—	—	2	1	6	2	5	—
Relapsing Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever	2	—	—	—	—	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—
Cerebro-spinal Meningitis ..	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Poliomyelitis	3	—	1	1	—	1	—	—	—	—	—	—	—	—	—	1	—	—	1	1	—	—	—
Pulmonary Tuberculosis ..	186	—	9	23	42	77	33	2	—	—	—	—	—	—	—	27	24	51	45	33	6	—	—
*Infantile Diarrhœa	20	20	—	—	—	—	—	—	—	—	—	—	—	—	—	2	4	9	3	1	1	—	—
Totals	503	23	83	177	63	111	41	5	—	—	—	—	—	—	—	100	98	94	82	101	28	—	189

* Voluntary Notification of cases under age of one year.

Corporation Infectious Diseases Hospital, Linacre Lane, Bootle—Total available beds, 120. Number of Diseases that can be concurrently treated, 5.

INFANT MORTALITY.

1912. Nett Deaths from stated causes at various Ages under 1 Year of Age.

CAUSE OF DEATH.	Total under 4 Weeks.					Total under 4 Weeks.	4 Weeks and under 3 Months.	3 Months and under 6 Months.	6 Months and under 9 Months.	9 Months and under 12 Months.	Total Deaths under One Year.
	Under 1 Week.	1—2 Weeks.	2—3 Weeks.	3—4 Weeks.							
All Causes	48	10	10	11	79	40	36	20	37	212	
	3	2	1	1	7	6	3	4	—	20	
Small-pox	—	—	—	—	—	—	—	—	—	—	
Chicken-pox	—	—	—	—	—	—	—	—	—	—	
Measles ..	—	—	—	—	—	—	1	2	5	8	
Scarlet fever	—	—	—	—	—	—	2	—	5	8	
Whooping Cough	—	—	—	—	—	1	—	—	—	—	
Diphtheria and Croup	—	—	—	—	—	—	1	1	1	3	
Erysipelas	—	—	—	—	—	—	—	—	—	—	
Tuberculous Meningitis	—	—	—	—	—	—	—	—	—	—	
Abdominal Tuberculosis	—	—	—	—	—	—	—	—	—	—	
Other Tuberculous Diseases	—	—	—	—	—	—	2	1	1	4	
Meningitis (<i>not Tuberculous</i>)	—	—	—	—	—	—	5	2	1	21	
Convulsions	4	2	3	—	9	5	4	4	5	23	
Laryngitis	—	—	—	—	—	5	4	6	11	26	
Bronchitis	1	1	3	—	2	3	4	2	6	1	
Pneumonia (<i>all forms</i>)	—	2	—	—	—	1	7	—	—	24	
Diarrhoea ..	—	—	—	—	—	2	—	—	—	5	
Enteritis ..	—	—	—	—	—	9	—	—	—	—	
Gastritis ..	—	—	—	—	—	—	1	—	—	—	
Syphilis ..	—	1	—	1	2	2	—	—	—	—	
Rickets ..	—	—	—	—	—	—	—	—	—	—	
Suffocation, overlying	—	—	—	—	—	—	—	—	—	—	
Injury at birth	2	—	—	—	2	—	—	—	—	2	
Atelectasis	3	—	—	—	3	—	—	—	—	3	
Congenital Malformations	3	1	2	—	6	—	—	—	—	6	
Premature birth	30	4	3	7	44	7	1	1	—	53	
Atrophy, Debility and Marasmus	6	—	—	2	8	8	10	3	2	31	
Other Causes	2	1	—	2	5	5	2	1	—	13	
	51	12	11	12	86	46	39	24	37	232	
Nett Births in the year	legitimate ...2,072					Nett Deaths in the year of					221
	illegitimate ... 50					illegitimate infants ...					11

TABLE 5.—COUNTY BOROUGH OF BOOTLE.

VITAL STATISTICS OF SEPARATE LOCALITIES IN 1912 AND PREVIOUS YEARS.

NAMES OF LOCALITIES	THE WHOLE BOROUGH				DERBY WARD				STANLEY WARD				MERSEY WARD				KNOWSLEY WARD				LINACRE WARD				ORRELL WARD			
	Population esti- mated to middle of each year.	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year.	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year.	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year.	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year.	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year.	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each year.	Births registered	Deaths at all Ages	Deaths under 1 year
1906 ..	65,174	2,171	1,209	312	12,311	428	215	52	11,253	293	146	35	12,642	406	279	72	12,339	397	269	62	13,809	498	250	76	2,820	149	50	15
1907 ..	66,145	2,168	1,128	268	12,756	439	191	44	11,277	249	144	23	12,520	377	260	62	12,333	430	238	57	14,214	528	240	61	3,045	145	55	21
1908 ..	67,127	2,182	1,225	314	13,210	469	189	51	11,299	278	152	31	12,397	415	304	83	12,327	381	260	61	14,623	497	266	66	3,271	142	54	22
1909 ..	68,120	2,138	1,148	253	13,664	415	228	51	11,324	257	142	28	12,273	394	295	73	12,321	372	205	48	15,037	541	231	46	3,501	159	47	7
1910 ..	69,122	2,016	1,019	249	14,124	441	196	57	11,348	224	123	18	12,149	350	237	65	12,314	365	200	39	15,455	498	223	53	3,732	138	40	17
1911 ..	70,130	2,093	1,283	308	14,590	436	219	49	11,370	247	196	39	12,021	391	278	61	12,307	356	275	76	15,876	525	266	68	3,966	138	49	15
Average.	67,636	2,128	1,168	284	13,442	438	206	50	11,311	258	150	29	12,333	388	275	69	12,323	383	241	57	14,835	514	246	61	3,389	145	49	16
Rates	..	31.4	17.2	133	..	32.5	15.3	114	..	22.8	13.2	112	..	31.4	22.2	177	..	31.0	19.5	148	..	34.6	16.5	118	..	43.3	14.4	110
1912	71,152	2,093	1,183	232	15,060	430	214	47	11,394	224	153	24	11,892	386	301	68	12,301	397	251	50	16,302	504	228	33	4,202	152	36	10
Rates	..	29.4	16.6	108	..	28.5	14.2	109	..	19.6	13.4	107	..	32.4	25.3	176	..	32.2	20.4	125	..	30.9	13.9	65	..	36.1	8.5	65

* These totals do not include 27 births transferred in 1911 and 36 in 1912.



